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## ABSTRACT OF AN ADDRESS ON MEDICAL EDUCATION.<sup>1</sup>

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MR. PRESIDENT AND GENTLEMEN OF THE COUNCIL: The first medical college in this country was organized in 1765, in Philadelphia, by Drs. Morgan and Shippen. It was abandoned, however, during the revolutionary struggle, but was reorganized in 1783. Three other colleges were established — Harvard, King's College, New York, and Dartmouth — before the close of the eighteenth century. The curriculum as to time and mode of teaching established by these early colleges has not been materially changed to this day, save, perhaps, only in the way of a retrograde movement. Then, a good English education with some classical and scientific knowledge was required of the student; now, nothing. Then, as now, three years of study, — some authorities say four, — and the attendance on two courses of lectures, from two to four weeks longer now than then, were the prerequisites of a candidate for graduation.

At that time many important branches of medical knowledge were almost unknown to the profession. Anatomy was imperfectly taught; physiology and organic chemistry were in their infancy; little attention had been paid to diseases of the eye and ear, or to the diseases of women and children; the chemistry of the urine was not understood, and as a consequence we knew little of the diseases of the kidneys; nothing was known of physical diagnosis of the diseases of the heart and lungs, itself a study of months; little was known of the nervous system or its diseases, and nothing of electricity in their diagnosis and treatment. Sanitary science, histology, and the use of the microscope in medicine have opened up new and important worlds to the student of medicine, — all children of the present generation. What additions have been made to our *materia medica*, and what knowledge have we gained of the physiological and therapeutical action of drugs! Surgery, under anæsthetics, has pushed its domain far beyond the most sanguine dreams of our

<sup>1</sup> An Address presenting the Claims of the Medical Department. Read before a "Council" in the Interests of Syracuse University, held at Syracuse, N. Y., December 18, 19, 1878.

fathers, and still the end of the advance of medical knowledge, of the appliances and inventions introduced during the last century, is far from being reached. The field of medical inquiry has doubled, if not trebled, in the last hundred years, and yet no more time has been allotted to or required of the student to learn his task. The student then had little to do, or he is greatly overworked now, or his work is not half done. How inconsistent to continue such a system!

At an early day in the history of medical education in this country the many imperfections of the system were distinctly pointed out and deprecated, and were tolerated only because of the sparseness of the settlements and the general poverty of the students and the country. The people needed doctors, even though they were too poor to pay a well-educated profession. But we have outgrown all this. There is no longer any excuse in this direction for an indifferent medical education. As a nation we are rich. No people on the face of the globe are so well fed, clothed, and housed, or enjoy so much of this world's goods, as the people of this country. We are certainly rich enough to ask for the best possible medical profession, and an occasional consulting fee of five hundred dollars ought to satisfy the cupidity of the highest culture.

To ordinary intelligent thought, if medical science can be presented in a sixteen or twenty weeks' course of lectures, the science would seem to be but little more than a bubble. And yet this is what our medical colleges aim to do. It is true that they give from six to seven hours' talk a day. This, to most minds, would appear more like confusion than knowledge. But the same lectures are repeated winter after winter, with slight variations, and they ought to be listened to for three or four winters to be properly learned and digested.

The world is moving on the subject of hygiene in our public schools; but what is the hygiene of our medical schools, the place above all others where we ought to look for the observance of sanitary law? What law of educating the mind do medical colleges obey? or, rather, what law do they not disobey? But with all possible crowding they must fail to do justice to medical science in a twenty weeks' course of instruction.

As a nation we may be abreast or in advance of other countries in our free public schools and the general intelligence of our people, but in the matter of medical education — an education fraught with so much interest to us all, the preservation of our own lives and the lives of our loved ones, the most choice blessings and gifts of earth — we are far behind every other enlightened nation on the globe, and even behind nations that we are apt to think of as half-civilized. Not that we have not many eminent physicians and surgeons, self-made men, far beyond the culture of the schools, an honor to the profession and country, and to whom the world is indebted for many important discoveries that give

to the profession of the country a world-wide reputation. It is not the head and front of the profession to whom we refer, but to the ordinary graduate as he comes from college under our system of instruction and methods of granting degrees, and who still has a heavy percentage of work to do to acquire a good medical education.

We have already stated that the time of study in this country is three years. Now in Canada and Great Britain the time of study is four years, and from eight to nine months in each year are to be spent in college and in attendance on hospital practice. A good preparatory education is required; the studies are graded, with frequent examinations for advancement, the examinations being conducted outside of the teaching faculties. All this, however, does not apply to Canada. Germany and France require near five years of study; in the Austro-Hungarian empire, Italy, Portugal, Russia, Australia, Belgium, and Denmark five years are compulsory; while in Holland, Chili, Brazil, Cuba, and Venezuela six years of study are thought to be necessary to qualify one to practice medicine; and still longer periods are required in Norway and Sweden. In all those countries a suitable general education is requisite, with frequent examinations for advancement to higher classes; the studies are graded, so that the student is not studying everything at once. American medical education in want of thoroughness, system, and order presents a humiliating picture when compared with the education of the nations of the Old World, as well as with those of the New. But let us look a little into the workings of this cheap medical education, — cheap in time and acquirements.

Our colleges are overstocking the market with their three thousand graduates a year, a heavy percentage of whom finally abandon the profession with disappointed hopes, and devote their energies to some other more lucrative employment. From the cheapness of American diplomas, and from the few unenforced legal restrictions on the practice of medicine, with or without a diploma, and without any known qualifications whatever, we have one doctor to every six hundred inhabitants, while a few miles from here, just over the Canadian border, they have only one to 1200 inhabitants, while in Great Britain there is but one to 1672.

France has one to	1814
Germany has one to	3000
Belgium has one to	2048
Austria has one to	2500
Italy has one to	3500
Norway has one to	3480

Thus we have two doctors in the United States to one in Canada, nearly three to one in Great Britain, more than four to one in France, and five to one in Germany. The just relative proportion of doctors to population has been variously estimated at from one in 1500 to one

in 2500. The present average of the civilized world would probably fall within these limits.

The number of doctors in a country does not seem to be altogether regulated by the law of supply and demand, but by the standard of education. As the educational standard lowers, numbers increase; as it rises, they decrease. In Great Britain for the last twenty years prior to the present decade the proportion of doctors to population has been on the decrease. It has been thought that the exacting examination for a license to practice deters many young men from entering the profession. If this is the true cause there would seem to be a law of limit to a higher culture, beyond which it could not be carried without detriment to the public good; but as our supply is so much in excess of the demand, double that of every other country, there can be no danger of a scarcity of doctors here if a substantial advance is made in the requirements for graduation.

Medical colleges have multiplied in this country from four in 1800 to eighty in 1875. Sixty-five are teaching rational medicine, eleven are homœopathic, and four are eclectic. This would seem to be an unwarrantable increase of colleges, certainly so as they are now conducted; however, numbers would not matter so much if their students were to be examined by an independent board for a license to practice.

In proportion to population, we have one medical school to one in Canada; two to one in Great Britain; three to one in Belgium, Germany, Italy, Norway, and Sweden; twelve to one in Austria, Brazil, and France; and as far as we have any information on the subject there is annually one graduate in medicine in the United States and Canada to 15,000 inhabitants, one to 18,000 in Great Britain, one to 48,000 in France, and one to 68,000 in Germany.

And yet, as already stated, we have two doctors to one in Canada, and nearly three to one in Great Britain. This would look as though less than half of our physicians came from the colleges. In a single foreign medical journal, in the matter of medical statistics, in the matter of college management, the number of students in attendance, the character of the examinations, the number of successful and unsuccessful candidates, and the general condition and progress of medical education and the profession, may be found more information on all these subjects in Great Britain and several continental powers than can be found in all the medical journals of this country, as far as my knowledge extends, on like matters of interest to the profession. Unfortunately, we have no cosmopolite journal, national in its character, that throws its arms alike, and for the best interest of all, around the student, the college, the profession, and the people. The colleges for the most part are closed books, and the profession has no ready means of becoming acquainted with itself.



In general, competition improves the quality of the product. The reverse is the case with medical schools, as shown in the falling off of the classes in all the colleges that have raised the standard of education. Harvard's classes shrink on the new plan of a three years' graded course of instruction and a lengthened college year of nine months, notwithstanding her age, prestige, and influential alumni. The average medical student "takes no stock" in a higher medical education.

The attorney is examined to practice in the courts and the divine to enter the pulpit, but we have an army of doctors practicing without the semblance of a sheepskin, — wolves in sheep's clothing, preying on the lambs of the flock. It is believed there are medical signs in this city now that represent nothing but ignorant criminal abortion.

The State of Illinois passed a law, which took effect July 1, 1877, establishing a state board of health, with power to act as a state board of medical regents. In one year this board "examined three hundred and sixty-six applicants for the license to practice, and rejected two hundred and twenty-one of them; it has driven one thousand two hundred unqualified practitioners out of the State; has stopped eight colleges from giving two graduating courses in one year; has refused to accept or to recognize the diplomas of eight medical schools; and has revoked six certificates for gross unprofessional conduct."

In this rapid multiplication of schools the Syracuse University has not been guilty of inflicting on the country another new school of the old sort. Your medical department is an old school, — Geneva Medical College, moved to Syracuse, organized about 1838, when there were but seventeen schools in the country. Four of the old professors still fill chairs in the college faculty.

From the inception of its removal, and in its first annual announcement in 1872, an optional three years' graded course of instruction was inaugurated, with a college year of nine months, of which but few students took advantage; enough, however, to test the merits of the system. The superior attainments of those who had thus studied through the lengthened college year, under even an imperfect system of graduation, over those who had attended the usual two courses of lectures was so marked when they came up for their final examination for the degree of M. D. that the faculty at once abandoned the old and the optional course of study for the new. In 1875 they adopted in full a three years' graded course of instruction, with written and oral examinations for advancement into the second and third years, with evidence of a good English education before entering the college. Every year's experience brings new evidence to justify the change. The change of plan of instruction has, no doubt, emptied some of our seats.

The colleges are equally greedy to fill their benches and swell their graduating classes for the prestige of numbers and the dollars they

bring, without any very high regard for the acquirements of their students, and it is believed that the examination for the degree of M. D. in many American colleges is often very superficial, almost a farce, and the possession of a diploma is no real guarantee of medical scholarship, — certainly no guarantee of scholarship like an Old World diploma.

In corroboration of these statements we may say that very few candidates for graduation are rejected in this country; I do not know just what per cent., but probably not more than two or three, notwithstanding all the looseness of college instruction common to the country. However, at Harvard, in June last, of the seventy-two candidates six withdrew their names, forty-seven succeeded, and nineteen were rejected. In Great Britain the questions and the number of candidates passed and rejected are published; on these subjects in this country the profession and public are almost entirely ignorant. But in Great Britain, under their graded, more systematic, and longer period of study, it is no uncommon thing for twenty or thirty per cent. of their candidates for medical honors to be rejected and sent back to the colleges for six months' further study, for they are examined by a board outside and quite independent of the colleges.

In May last, sixty-eight students presented themselves before the Royal College of Surgeons, England, to pass a higher grade, thirty-six of whom were rejected; and still later, twenty-eight candidates presented themselves for fellowship, seventeen of whom failed to satisfy the court of examiners. We have no such guards as these in this country to protect the people from an ignorant medical profession.

In 1876 five or six medical faculties issued a call for a convention of medical colleges, to assemble in Philadelphia, on the 2d of June, "to consider all matters relating to reform in medical college work." This was a new departure, and much was hoped and expected from the convention. It was hoped that a new era was about to open up in medical education with the dawn of the second century of the republic, and that the old and inefficient system of instruction that was forced upon the colonies and on the republic in its early days by the exigencies of the time was about to give place to a plan of education commensurate with the advance of science and in accordance with the growth and general advancement of the country.

Syracuse sent two delegates to the convention, but the first morning's session revealed its character to such an extent that one delegate left it in disgust, and the other attended but one more session. They saw no heart or soul in it for anything better or higher in medical education. These early convictions proved but too true. The fruits of that convention are on my table in the way of the history, constitution and by-laws, and work of the American Medical College Association, which holds in its membership twenty-four or more colleges, and they show by

negative evidence a disgraceful rottenness in American medical colleges past belief, had it not been thus semi-officially announced.

They reveal the fact that the colleges have openly solicited, by "wholesale," students to fill their benches almost or entirely without charge. The association resolved "that no medical faculty should issue a diploma not bearing the graduate's name," and that "no degree in medicine should be conferred under any circumstances except after an examination in person of the candidate upon all the branches of medicine." Diplomas signed and ready for sale! Degrees conferred without personal examination, and students gathered in by "wholesale" without fees! Did this convention on these subjects legislate "and resolve" against phantoms or against facts? Is it any wonder that medical education is at a low ebb, and that the profession is overcrowded?

Thanks to the American Medical College Association for the attempt to suppress these abuses. But more was expected of the convention than the enforcement of common honesty in high places. Beyond this, in our judgment, the objective point of the association is mercenary, — simply a college trades-union for the better collection of college fees. "The objects of this association," as set forth in the constitution, "shall be the advancement of medical education in the United States, and the establishment of a common policy among medical colleges in the more important matters of college management." This is the beginning and the end of the advancement of medical education by the association. It tells the same old story of more than one hundred years in regard to two courses of lectures, required time of study, age, moral character of the student, not of the college, etc., etc., with two slight changes only. For some time the lecture term has been twenty weeks in a few colleges; now it is to be twenty weeks in all. Formerly the time of study was three years; now, two years and nine months. Two to four weeks added at one end and three months taken off at the other! We fail to see the "advancement;" however, it must be there or somewhere else, for that is the object of the association.

The association acted with great consideration to get things ready to prevent any shock or disaster to this astounding and unlooked-for advance in medical education; it very kindly, in the enacting clause, postponed the full consummation of the great event for two years. There is still another resolution bearing on medical education, as follows: "This convention recommends to all medical colleges to offer to students the option of three courses of lectures." Three or four courses of lectures have always been at the option of the student. The practice adopted by some of the colleges of graduating two classes the same year is also prohibited by the association.

In this historical document there are no less than eight sections pertaining to medical fees. The students must pay up in cash, and the

colleges are not to be filled hereafter with students by "wholesale" without fees. All these provisions are to take effect immediately. The glory of the American Medical College Association in "the advancement of medical education in the United States" is yet to come. It possesses great power for good, and we trust usefulness and honor lie in its future pathway.

If the twenty-four colleges in the association are really in earnest for reform, and the six or seven colleges, not members, who have already adopted a curriculum of real reform, with two or three more added to the list, we should have a working majority of all the colleges in the country, and now even the moral force of the present minority in adopting so just a course would win over other colleges, from principle; the balance would soon follow, from the disgrace and loss of caste attendant on adhering to the wrong. Still farther, if the profession were united, the American Medical Association, the state and county medical societies, could refuse to recognize the diplomas and the colleges still working on the lower plane.

This American Medical College Association is an imperial congress in medicine for this country. It has strength and power; there is no authority above it in matters pertaining to the standard of medical education. It has already exercised its prerogative over the length of the college year and time of study. Will it now strike the key-note of a higher medical education? Will it elevate the standard, or continue to trail it in the dust?

There is one further step in the way of reform that this college is desirous should be taken, and that is an independent board to examine the students for medical honors.

We are prepared to petition the legislature of the State of New York to appoint a medical board of regents to examine all the candidates from the colleges in the State for the degree of M. D. If New York, Albany, and Buffalo would join in the petition, we might possibly have such a board before the close of the present college year.

But let us inquire as to the probable effect of the general adoption of a three years' graded course of instruction, with a lengthened college year. On the present plan, a college with an average class of two hundred students would receive one hundred new students and graduate one hundred every year. On the new plan, with an average entering class of one hundred, the class would consist of three hundred in place of two hundred. If the lecture fees were fixed at one hundred dollars, the annual income of the college on the old plan would be twenty thousand dollars, on the new thirty thousand dollars; or with a charge of a half fee for the third year, as in this college, it would still be twenty-five thousand dollars.

But there would probably be a falling off in the actual number of

medical students; they might shrink one third on the three years' plan, though it is believed they would not, and still the college class and income be undisturbed. Prospectively, the change would add students to the classes and dollars to the college coffers.

There has always been a small percentage of students dissatisfied with the advantages of the American college system (and it is believed to be largely on the increase), who have continued their studies abroad for one year, two years, or more after graduating in this country before entering into practice. But the student need not go abroad to continue his studies, except as a matter of ornament, for we have at home the requisite knowledge, talent, and ability to teach all that is valuable in medicine if it were properly incorporated into our college system. Notwithstanding what we have said of colleges and graduates, we believe the American mind to be more practical than the European, and with equal knowledge the American is the better man at the bedside.

The outlook, as a result of the change, is for the better in every direction; better for the college, better for the student and patient, not even "partial evil" for "universal good." But how can it be done? Just issue the next annual announcement on the new plan, and work to it, as the Chicago Medical College, Harvard, Syracuse, Michigan, and the University of Pennsylvania have done. The Johns Hopkins Hospital Medical School is to be conducted on the graded plan, and now, while we write, we hear that the University of California and the Medical College of the Pacific have fallen into line. "Where there is a will there is a way."

But it has been contended in several quarters that only through endowed professorships can a higher college culture be attained or maintained. If this is the only basis for reform, reform is afar off, somewhere among the distant ages. What intelligence can have patience with such twaddle? Moonshine! nonsense!

One of the latest utterances on this subject comes from a venerated and honored teacher, Prof. Frank H. Hamilton, who delivered the annual address before the American Academy of Medicine, at Easton, Pa., in September last,<sup>1</sup> and to whom we would offer a tribute of affection and respect, as one from whose eloquent lips, near half a century ago, we received our first lessons in surgical science. He says that in all the efforts of the colleges in the direction of a higher medical education, "not one of them has ventured a step beyond what was deemed safe in a pecuniary point of view. Nor will they." As a whole, the tendency of the address is conservative, apologetic for the evils it so forcibly presents and condemns. It sees no way out of the maze except through endowed professorships. However, the whole evil is made to hinge on the possible loss of the "almighty dollar." But we hope we have al-

<sup>1</sup> New York Hospital Gazette, October 3, 1878.

ready shown that this part of the argument in favor of the old system is a bugbear.

The medical colleges of Great Britain are not endowed, and why must ours be to secure a higher medical education? Teachers there, as here, are paid from college dues, while on the Continent the management of the schools is more or less directly under the control of the governments, and the salaries of the professors are fixed, students or no students, at sums varying from six hundred to two thousand six hundred dollars a year.<sup>1</sup>

But your medical department adopted the graded plan without endowment and without much regard to pecuniary results. It saw the better way, and walked therein, and has maintained itself for four years, — not, however, without some self-sacrifice, — and it still proposes to maintain itself.

From this outline sketch of medical education at home and abroad, we can see something of our national position in the world of medicine. It is flattering neither to our pride nor to our intelligence. We hope the advanced position taken by the medical department of this university will meet your approval and commendation; that you may give us both moral support and material aid, at least to such an extent as to clear the college property from indebtedness.

The needed reforms would seem to be some standard of preparatory education, a graded course of instruction extending over a period of three, if not of four or more years. If the reform is to be radical and complete, five years are as much of a necessity now as three were one hundred years ago, with lengthened college year, annual examinations for advancement, and a final examination by a board independent of all teachers and colleges, thus giving a real and a uniform value to all diplomas.

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## RECENT PROGRESS IN THE THEORY AND PRACTICE OF MEDICINE.

BY A. L. MASON, M. D.

*Germ Theories.* — Dr. John Drysdale,<sup>2</sup> in the inquiry as to the intimate nature of the miasm or infectious matter on which diseases depend, reduces the exciting causes to parasitic germs and graft germs, or “partial bions.” The experiments of Tyndall show that all ordinary air contains ultra-microscopic organic matter, and that noxious living matters may be wafted hither and thither in apparently pure air. But as bacteria are easily demonstrated and microphytes are certainly present

<sup>1</sup> These and many other facts of the paper have been obtained from the Introductory Address of Prof. William Pepper, A. M., M. D., of the University of Pennsylvania, delivered October 1, 1877.

<sup>2</sup> The Germ Theories of Infectious Diseases. London, 1878.



in the blood in many contagious diseases, the author says "it has been concluded somewhat hastily that the growth and development of these germs or parasites are the cause of specific diseases in general. . . . The simple statement that a particular disease is coincident with the presence of foreign organisms, or even of a particular parasite, covers many fallacious inferences, for their presence may be secondary or accidental." Passing over the well-known parasitic diseases like scabies, trichinosis, etc., the author comes to anthrax or splenic fever, considered to be characterized by the universal presence of the *bacillus anthracis*, and relapsing fever, provisionally admitted to be caused by the *spirillum Obermeieri*, although Dr. Drysdale states that the same bacterium is found abundantly in the Liverpool water. "It may well be," he says, "that the discovery of micrococci even constantly in particular infectious diseases by no means proves the causation of that disease by specific parasitic germs." From the ubiquity of fungus germs, bacteria, they are found in great numbers in many parts of the body. The specific bacterium cannot be sufficiently isolated for inoculation without introducing some of the diseased secretion containing graft-germs, which might be the true contagium.

As the author cannot adopt the parasitic germ (bacterian) theory, which places the cause of disease solely in something foreign to the diseased body, he adopts the alternative of tracing the exciting cause to morbid secretions thrown off by the diseased body, which may contain particles of living matter (protoplasm), after the hypothesis of Dr. Lionel Beale that the miasms and contagia are actual portions of degraded protoplasm or living matter, graft-germs, partial bions, which being transferred to a new body continue to live and grow, causing the phenomena of contagion and infection. Here the opposing force of vital resistance and constant elimination comes in. The white blood corpuscles, lymph corpuscles, epithelial cells, and especially the spermatozoa, detached living particles of the higher organism, are classed among the partial bions. In opposition to Dr. Beale, who regards the multiplication of these graft-germs alone as the cause of disease, the author considers the partial bions of the specific fevers as specific *stimuli* also, which excite in the healthy parts an altered vital action which constitutes the disease. The interaction of two somewhat different kinds of protoplasm, as seen in the process of reproduction, is supposed to find its analogy in a *quasi-sexual* operation of disease germs, and, although there is no actual proof that partial bions can be reproduced in any way except by fissiparous generation, the author proposes to add the term *conjugation germ* to those already in use, thinking that the admission of a quasi-sexual power in the partial bions or infectious germs would remove the objections to both the parasitic and simple graft-germ theories, which tend to consign these diseases to a department of natural history. "Were it so," he continues, "there would be little hope of their extinction or

mitigation by the medical art. On the other hand, if they are diseases bred within us from altered conditions of health, our prospects are better, though not unreservedly so."

The parasitic origin of diphtheria, which was so strongly maintained a few years ago by Oertel, Eberth, Letzerich, and other German writers, has been controverted by Senator, Chauveau, Beale, and Mackenzie,<sup>1</sup> who have found the *leptothrix buccalis* and its spores in diphtheria, as in other forms of stomatitis, but no specific micrococcus. Dr. Beale states that "vegetable germs are present in every part of the body of man and the higher animals, probably from the earliest age, and in all stages of health. . . . Millions of vegetable germs are always present in the dorsum of the tongue and in the alimentary canal."

Drs. Edward Curtis and Thomas Satterthwaite, of New York, as the result of experiments in the inoculation of diphtheritic membrane upon rabbits, conclude, among other things, that the poisonous quality which can be separated by filtering, and cannot be destroyed by a strong solution of salicylic acid, is due to some particulate thing which is not soluble in cold water, and that it is not correlated to the vital activity of the bacteria present in such membrane. The deduction is that "there is no theoretical ground for assuming that preventing the bacteria of a diphtheritic patch from making their way through the underlying mucous membrane will *per se* prevent general diphtheritic infection of the system."

The reported discovery by Letzerich of the micrococci and spherules of protoplasm in the blood of typhoid fever patients, supposed to be characteristic of that disease, and the production of a somewhat similar disease in rabbits by the injection of portions of the stools containing these micrococci, with enlargement and induration of Peyer's patches (without ulceration, however), are the subject of an article in the *Lancet*.<sup>2</sup> The conclusions do not appear to be entirely warranted.

Sir Joseph Fayrer read an interesting paper on the Relations of the *Filaria Sanguinis Hominis* to Endemic Disease in India before the Epidemiological Society of London,<sup>3</sup> in which attention was called to the advance in recent years in the knowledge of the relation of this parasite to certain forms of tropical disease in which the filaria is found in the blood, especially chyluria and other disorders of the lymphatic system, elephantiasis Arabum, hæmaturia, hydrocele in certain forms, etc. The wall of the aorta seems to be a favorite place for development, the parasite being found coiled up within a small tumor. When in embryo the length is about  $\frac{1}{100}$  of an inch, the breadth from  $\frac{1}{1000}$  to  $\frac{1}{700}$ ; the worm at a later stage attains a length of three fourths, and a breadth of one fortieth of an inch. Many forms of disease appear to be associated

<sup>1</sup> Diphtheria: Its Nature and Treatment. By Morell Mackenzie, M. D. London. Philadelphia: Lindsay and Blakiston. 1879.

<sup>2</sup> The Lancet, January 25, 1879.

<sup>3</sup> The Lancet, February 8, 15, 22, 1879.

with the presence of this parasite. The area of distribution of these diseases is said to correspond with the geographical distribution of the musquito, which is thought to be a propagator of the parasite through the agency of drinking-water. The rare occurrence of these affections in temperate climates, where musquitoes are numerous, is not considered.

*Diphtheria and Croup.* — At a meeting of the Royal Medico-Chirurgical Society, held October 22d,<sup>1</sup> the report of the scientific commission to investigate the relation existing between the diseases "known as membranous croup and diphtheria," after enumerating the causes of membranous inflammation of the larynx and trachea, and throwing doubt on simple exposure to cold as a true cause, recommends that "croup" be used solely as a clinical definition implying laryngeal obstruction occurring with febrile symptoms in children, and that the term "membranous laryngitis" should be employed when possible, for the avoidance of confusion. This report, although not positively affirming that all cases of croup are of diphtheritic origin, conveys the impression that the facts within the knowledge of the commission do not justify the supposition that the two diseases are distinct.

*Milk Epidemics of Typhoid Fever and Diphtheria.* — Epidemics of typhoid fever, supposed to have been generated by infected milk, have been so alarmingly frequent of late years in Great Britain that the registration and inspection of dairies have been deemed advisable by Parliament. Extensive epidemics traced to this cause have occurred at Bristol, Manchester, Glasgow, and Ascot. At Glasgow one hundred and sixty-three cases were observed. The epidemic at Ascot, which was most carefully investigated by Dr. Ballard,<sup>2</sup> differed in some respects from the others. No similar epidemic of typhoid fever had prevailed at Ascot within the memory of the oldest practitioner there, a period of more than forty years. While previous milk epidemics had lasted but a few months, this one extended over a period of four and a half years. The persons attacked were, with few exceptions, using the milk from the same farm, and, although months sometimes elapsed between the consecutive cases, the source was thought to be always the same, and this intermittency of the invasions of the fever was thought to indicate an intermittent cause for the milk infection. It was found at the farm that the milk might readily have been contaminated by excremental filth, but as the possibility of origin from "filth" *de novo* was not recognized, the source of the specific contagium was sought in the water supply, with negative results only, although Dr. Ballard offers an ingenious theory based upon the geological formation and the possibility of infection from a distance through the subsoil water, which would also account for the intermittency of the outbreaks. The facts,

<sup>1</sup> The Lancet, October 26th; The Doctor, November 1, 1878.

<sup>2</sup> The Sanitary Record, January 17, 1879.

however, show that of sixty-eight cases in thirty-nine families no less than fifty-eight cases in thirty-one families occurred among persons using this particular milk. Thirty-six were children or young persons. In twenty-one families there were more cases than one, — from two to four — in most instances concurrently or in near sequence. The possible infection through the cows was not considered.

At the annual meeting of the Pathological Society of London,<sup>1</sup> Mr. W. H. Power presented his report of an official investigation of a recent fatal epidemic of diphtheria in North London. There were two hundred and sixty-four cases and thirty-eight deaths. It was concluded that bad drainage was not the cause, nor milk contaminated with sewage, but the milk *per se*. Most of the persons affected were supplied with milk from a particular farm. No external conditions could be found to account for this, but some state of "the cow as cow, and of the milk as milk," was regarded as the source of the poison. The milk from this dairy was distributed among four hundred and seventy-three households, of which sixty-eight were invaded by diphtheria, whereas but thirty cases occurred in the 2227 other households of the same district, which were supplied by other dairies, a disproportion of more than ten to one. No person at the dairy was known to have had the disease. Garget, an affection of the udder, was suggested as a possible cause of the infected milk supply. In favor of this hypothesis, the other diseases which are known to be communicable from animals to man, in more or less changed aspects, were cited: vaccinia, rabies, trichiniasis, splenic fever; the foot and mouth disease, causing aphthæ and disturbance of the stomach and bowels; finally, scarlet fever and typhoid fever from infected milk. As a coincidence, it was noticed that during a recent outbreak of diphtheria at the Princess Mary's Home, garget prevailed at the farm which supplied the milk.<sup>2</sup> If it be granted — and the investigations appear to be somewhat conclusive — that milk was the cause of this and of other epidemics of diphtheria, it is quite within the bounds of probability that some affection of moderate or slight severity in the cow may give rise to diphtheria in man.

*The Hesse-Darmstadt Epidemic.* — The outbreak of diphtheria in the grand ducal family of Hesse-Darmstadt<sup>3</sup> led to the most careful investigations and reports on the part of Professor Oertel, of Munich, and Dr. Eigenbrodt, who were in attendance. In the first place, the palace, which was comparatively new, was found, by the most thorough scientific exploration, to be in excellent sanitary condition, — a statement which is rendered more probable by the circumstance that, outside of

<sup>1</sup> The Lancet, January 11, 1879.

<sup>2</sup> Medical Times and Gazette, January 18th; Lancet, January 18th; Medical Press and Circular, January 15th; Dublin Journal, February, 1879.

<sup>3</sup> The Lancet, December 21, 1878; The Medical Times and Gazette, December 21, 1878; The British Medical Journal, December 21, 1878, January 4, 11, 18, 25, February 8, 1879.

the grand ducal family, no one of the sixty-eight members of the household was infected. Although the first case was isolated as soon as its nature was recognized, during the eight days following five others occurred in rapid succession, with one fatal result. The family, through repeated attacks of acute and chronic tonsillitis, were thought to have been peculiarly susceptible to this disease, and its transmission by kissing seems to be undoubted. The first case, in the absence of any positive evidence as to its source, was supposed to have been contracted outside the palace, perhaps from some slight or unrecognized case in the town. It is also noticeable that the grand duchess, after caring for her whole family with the most admirable devotion, was attacked, during their convalescence, twenty-three days after the last previous infection, at a time when continued anxiety and exposure, instead of exhausting the susceptibility to an attack, appear to have rendered it more fatal.

Attention is called to the increasing list of deaths in the medical profession in France and Germany during the past few years from diphtheria contracted under similar circumstances by *direct contagion*, — Valleix, Blache, O. Weber, Brücke, Hoffmann, Heine, and others, all of whom had undergone much previous exposure.

With regard to treatment, advantage was taken by Drs. Oertel and Eigenbrodt of all the resources of modern therapeutics: solutions of chlorate of potash, salicylic acid and permanganate of potash, chlorine water, inhalations of lime water, disinfectant spray and steam; internally, salicylic acid, quinine, benzoate of soda, sulphur, and morphine, with *plenty of nourishment and stimulants pro re nata*, — a symptomatic treatment, directed both to the local and general conditions, without reliance upon any specific remedy as such.

The above-mentioned epidemic, in which the cases were all of severe type, is the subject of an article in the *Lancet*,<sup>1</sup> in which the following facts are emphasized: that diphtheria, although sometimes highly contagious and epidemic, again appears to be strictly localized, clinging to certain houses, or even rooms, with little tendency to spread; also, that it originates "by unknown conditions in regions where the operation of contagion can be almost entirely excluded." Although bad sanitary conditions have often been observed to attend outbreaks of diphtheria, such is not always the case, and the local defects can be considered as aggravating or predisposing causes only.

*Diseased Meat as a Cause of Typhoid Fever.* — Professor Huguenin and Dr. Walder<sup>2</sup> record the history of an extensive epidemic of typhoid fever which was thought to have been caused by eating diseased veal.

<sup>1</sup> November 23, 1878.

<sup>2</sup> Correspondenz-Blatt für Schweizer Aerzte, August 1, 1878; Berliner Klinische Wochenschrift, No. 39, 1878; Medical Times and Gazette, February 8, 1879.

At a festival of the singing societies of the district, held at Kloten, Canton Zurich, Switzerland, about eight hundred pounds of veal and sausages were consumed. The veal turned out to be infectious, and from the second to the ninth day after the festival many inhabitants of the neighboring villages, about five hundred in all, were taken with nausea, headache, fever, abdominal pain, and meteorism. Those persons who ate pork did not suffer, nor did those who drank wine or water without partaking of the veal. On the other hand, many of the fever patients declared that they had not touched water the entire day. The disease appears to have been typhoid fever (*typhus abdominalis*), which ran a nearly typical course in most instances, with rather a severe onset, much delirium, and great tumefaction of the spleen. In four fatal cases the autopsies showed all the characteristic lesions of typhoid fever. In four instances there were relapses, and twenty-seven cases of secondary infection were observed in attendants. Professor Huguenin adds that several instances of genuine typhoid fever have occurred in calves in the barns of some of the patients. At least one calf which was used at the festival was known to have been sick before it was slaughtered. There had been no epidemic of typhoid fever in that neighborhood for many years. Detailed accounts will be published in a short time.

(To be concluded.)

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## PROCEEDINGS OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

T. M. ROTCH, M. D., SECRETARY.

DECEMBER 28, 1878. *Medical Library.* — In accordance with the advice of the committee on change of rooms, the society authorized the president and treasurer to make such arrangements as should secure the use of the hall belonging to the Medical Library, on Boylston Place, for the Suffolk District Society, at the rate of three hundred dollars per annum.

*Metallo-Therapeutics.* — DR. J. J. PUTNAM read a paper on the supposed cure of cutaneous anæsthesia by the application of metals to the skin, which was published in the *JOURNAL* of March 13th.

*Disease of the Spinal Cord.* — DR. F. MINOT reported the following cases of disease of the spinal cord, saying that they were not offered to the attention of the society on account of their novelty, but in the hope that any contribution to the study of this interesting class of cases might be of value. They comprise one case each of bulbar paralysis, disseminated sclerosis, wasting palsy, locomotor ataxia, and lateral sclerosis, which were all in his service at the Massachusetts General Hospital at the same time in the spring and summer of 1878.

CASE I. *Bulbar Paralysis.* — M. B., sixteen years old, entered the hospital April 18th, as a surgical patient, on account of difficulty in swallowing. The nature of her complaint being recognized, she was transferred to the medical



side. She was single; American born; family history said to be good. She enjoyed good health till February, 1877, when she caught cold, as she said, and coughed more or less, raising frothy, whitish, and sometimes yellowish sputa, but no blood. She was never confined to the house. About the same time she began to notice a difficulty in speaking, which became worse during the following summer, but improved somewhat afterwards, as she thought. About two months later she began to have difficulty in swallowing, and this symptom, also, varied at times. At the same time ptosis of the left eyelid occurred, which remained permanently. During the summer of 1877 the catamenia ceased for three months, and they were also absent for four months preceding the patient's entrance into the hospital; otherwise she had been regular. There had been no impairment of motion or of sensation in the limbs, except that there had been some loss of strength in the right leg for a week before her entrance. The appearance of the patient was striking from the immobility of the features and the ptosis of the left eyelid. Her expression was that of sadness, and as if she were about to cry. The speech was slow and imperfect, and the voice extremely nasal. There was much difficulty in swallowing, liquids being rejected through the nose, but she could get down soft solids, such as oatmeal porridge, rice, etc., pretty well. The tongue was protruded straight, and to the full extent. There was some flow of saliva from the mouth, diplopia, vertigo, and flushing of the face. She complained of pain in different parts of the head, and particularly beneath the lower jaw, on the right side. These pains, she said, were increased in damp, cold weather. She walked slowly and with difficulty, but was able to get down-stairs. The muscular power of the arms and hands was deficient. She had lost much flesh. — DR. J. J. PUTNAM, who kindly examined the patient, found the faradic reaction of both facial nerves much diminished, the limits of muscular contraction being soon reached with currents of moderate strength. Faradic reaction of the palate and pharynx was greatly diminished, as was also the sensibility of the palate. All the muscles of the palate and pharynx reacted better to galvanism than to faradization, but there were no signs of the "reaction of degeneration." There were involuntary contractions of the facial muscles, both associated and reflex, giving the expression of laughing and crying to a marked degree. Galvanic irritation of the larynx excited feeble movements of swallowing. Examination of the larynx by Dr. Knight showed the vocal cords to contract and open perfectly, though feebly. The patient gradually failed, and died June 19th. The chief complaint she made was of headache, which was nearly constant. About the 1st of June she became unable to expectorate, and began to have increased difficulty in swallowing, so that in a few days she was unable to take any food by the mouth. On the 18th she fell on the stairs, apparently receiving no injury, but the headache increased in severity; it was relieved by chloral hydrate and bromide of potassium given in enema. During the night there was difficulty of breathing and cyanosis of the face. She died apparently from apnoea, the respiration ceasing some little time before the heart stopped breathing. The friends refused permission to make a post-mortem examination. Among other interesting points in this case are the age and sex of the patient, the disease being rare under

the age of forty, and also in the female sex. It is remarkable that the power of protruding the tongue was retained, and it is noteworthy that, as in this instance, "catching cold" is frequently assigned as the cause.

CASE II. *Disseminated Sclerosis.* — E. C., thirty-one years old, seaman, entered hospital April 23, 1878. Health always good till September, 1877, when he was struck by a whale, thrown into the air, and fell upon the gunwale of a boat, striking the left side of his body, a little above the crest of the ilium, and the left side of the forehead. His urine was bloody for a few days after the accident, and in three weeks he noticed "twitching" of the eyeballs, which has continued ever since. There has been some pain in the back of the neck together with a grating sound; on turning the head, some involuntary twitching of the arms and legs, especially those of the left side, and constant shaking of the head ever since the accident. He had been losing strength and flesh rapidly for a month before his entrance. There was almost constant lateral oscillation of the eyeballs, with tremor of the head and occasionally of the limbs. The hearing and smelling were imperfect on the right side as compared with the left. The patient was apt to stumble in walking. He complained of pain in the forehead and behind the left ear. The eyesight was impaired, especially for near objects. The urine contained a trace of albumen and a few hyaline casts. He remained in hospital till May 16th, and went out slightly improved in his general condition. The disease was evidently in an early stage, many symptoms frequently met with being wanting, as, for instance, the affection of the speech.

CASE III. *Wasting Palsy with Lateral Sclerosis.* — T. S., twenty-eight years old, single, stone-cutter, entered hospital May 23, 1878. Health good till two years previously, when he began to have pain in the right knee and weakness in the limb. About the same time he found he could not straighten the fingers of the left hand, the two distal phalanges of which were flexed. The muscles of the hand began to waste. One year later the left knee and leg were affected similarly to the right, but to a less degree. Walking became difficult. He had occasional attacks of pain along the course of the left facial nerve. He gave up work nine months before his entrance. The left hand is a good example of the claw-like hand of muscular atrophy. The ball of the thumb is much flattened. There is some wasting of the dorsal interossei muscles, especially between the thumb and forefinger. Circumference of left arm, just below elbow, half an inch less than right. Lower part of sternum and adjacent cartilages project strongly forward and to the right. There is a marked spinal curvature, with concavity backward and to the right. He walked slowly and with difficulty, as if the feet were made of lead, the toes dragging on the ground as he advanced. The tendon reflex was exaggerated in the legs. The internal treatment consisted in the administration of one sixtieth of a grain of phosphorus in pill, three times daily, which was continued from May 24th till August 16th, when it was omitted, and the iodide of potassium, in ten-grain doses, substituted for it. Electricity was employed daily under the direction of Dr. J. J. Putnam, who also applied the actual cautery to the back by means of Paquelin's instrument about twice a week. The patient constantly declared that he was improving. November 1st it was reported that he could

walk much better, but that the left hand and arm were about the same as at entrance. After this date he became an out-patient, and is at present employed in light work about the hospital, still continuing the treatment, which seems to have benefited the sclerosis to a marked degree, as he can now walk quite well, although he still drags the toes somewhat. There is some improvement in the hand, but he is unable to bring the thumb and little finger in contact. The "tendon reflex" continues in an exaggerated degree.

CASE IV. *Locomotor Ataxia*. — W. U., thirty-six old, single, fisherman, entered hospital May 27, 1878. He had been much exposed to wet and cold, in the prosecution of his business. He also had syphilis five years previously, and gonorrhœa several times; moreover, he had drunk liquor freely. His present disease began four years ago, with obstinate vomiting, which still continued, though at less frequent intervals. Along with the vomiting he had a feeling of constriction around the waist which was especially severe in the forenoon. Soon after this he noticed a feeling of numbness in both legs, especially below the knees, and much difficulty in walking from loss of control over the limbs. The hands and arms trembled when he attempted to use them. He had attacks of vertigo. These symptoms had been steadily increasing up to the time of his entrance. The movements of the limbs in walking were very characteristic of locomotor ataxia. He was unable to stand with the eyes shut, and had plantar anæsthesia. He complained of darting pains in his trunk and limbs, extending down to the toes. The reflex movements of the limbs were greatly diminished; there was much nausea. The urine contained a trace of albumen. On account of the syphilitic antecedents, he was treated with the biniodide of mercury and iodide of potassium, which were continued at intervals during his stay in the hospital. There was some relief from the pain, but no essential improvement at the time of his discharge, July 27th.

CASE V. *Lateral Spinal Sclerosis*. — A. C., twenty-five years old, domestic, single, entered the hospital June 24, 1878. She had passed some time during the winter in the Boston City Hospital. Her parents were living and well. Her own health had always been good before the present disease, for which she knew no cause. She had never received any bodily injury. Eighteen months ago she first noticed some difficulty in flexing the right foot, with numbness in the part and a tendency to stub the toes of that foot in walking. The symptoms increased, and were succeeded by tremor of the foot and leg up to the knee, provoked by any excitation, and at times coming on without any apparent cause. She had some pain in the calves of the legs on walking. The catamenia were regular; bowels rather constipated; no affection of the sphincters; appetite poor. The following report of her condition is by Dr. J. J. Putnam: "The patient walks as if heavy weights were attached to both feet, compelling her to use all the muscles of the trunk in moving them forward. The feet are inclined to 'toe inward.' All motions of the feet and legs are possible, though all are feeble, especially dorsal flexion of the feet and flexion of the right leg. There appears, however, to be but little atrophy of the muscles, and the feebleness in performing a given movement is evidently due in part to faulty innervation: thus, in attempting to perform dorsal flexion of the foot she involuntarily blocks the movement by contracting the muscles

of the calf as well as the anterior tibial. The electro reaction (faradic) of almost all the muscles seems slightly diminished. There is very great exaggeration of all the 'tendon reflexes' of the lower extremity." Ophthalmic examination by Dr. Wadsworth showed vision of the left eye almost absent, and that of the right impaired. There is separation of the retina in the right eye, and connective tissue opacities in the vitreous of the left. A galvanic current of moderate strength was applied along the spine for ten minutes daily; iodide of potassium, followed by iron and quinine, was given internally. There was no essential change in her condition when she was discharged, August 27th.

*Color-Blindness.* — DR. B. JOY JEFFRIES spoke on color-blindness in continuation of his remarks at the meeting May 25, 1878. He was engaged in testing for color-blindness in the public schools of Boston, with the result of finding the defect as frequent as has recently been found in Europe. He again showed and explained Professor Holmgren's method with a large number of small knots of variously colored worsteds; this test depends wholly on comparison, no names of color being used by the examiners or those examined, and they need not even know each other's language. Until we had this test in the practical form in which Professor Holmgren has put it, the gathering of such statistics as are now being made was impossible. One hundred persons can, by this test, be readily examined in an hour, while with most other methods that time would be needed to test a single individual in order to arrive at a similar degree of accuracy. Dr. Jeffries also spoke of the necessity of teaching the names of colors in the primary and grammar schools, forcibly illustrating it by what he had found, and showing that any test requiring the examined to use the names of colors would result in proving that about three fourths of all the boys were color-blind, as was the unfortunate result when Dr. Favre, in France, made use of a similar false method of trial. He also described the palliation of color-blindness by artificial light, by means of yellow glass resembling it and by a solution of fuchsine (an aniline red) hit upon by Professor Delbœuf, of the University of Lille, Belgium. From Delbœuf's reports much had been expected from this latter method, but a test of five color-blind persons had not seemed to place it much above artificial light or yellow glass in its assistance to prevent the color-blind's mistakes. He closed by speaking of the almost universal action of the government railroads and private companies of Europe in the control of color-blindness among the employees, illustrating the necessity of this by the reports of the various examiners as to the percentage of color-blindness among those daily employed in duties where a perfect color perception was necessary for the safety of the lives and property of the passengers. Whilst bystanders had wondered at Dr. Jeffries' perseverance in what seemed so monotonous a task, he had, as he knew others would, found that this sort of examination had great psychological interest aside from the value of the information in reference to color-blindness itself and its prevalence among males.

JANUARY 25, 1879. *Dr. Jacob Bigelow.* — DR. G. H. LYMAN spoke as follows concerning Dr. Jacob Bigelow: Mr. President, — When one of our number, however obscure, who has been in his way an honorable and honest

worker is taken from us, we are all glad to give some words of eulogy, which often under the impulsive emotions of the occasion may be thought extravagant and misplaced; a kindly error, it must be confessed, but still an error, for when a really great man dies we have no language remaining to distinguish him from others. This is peculiarly applicable to the present occasion, when it becomes our duty to allude to the death of Dr. Jacob Bigelow, our oldest, and, without disparagement to others, it may be said our most distinguished member. For the honor of the society we wish to make some record of one who has filled a first place among his brethren so long and so well. The older members are all familiar with his wisdom and gravity in legislation, his wit and learning on every social occasion, his sound judgment in consultation, his moderation and serenity at all times. His great personal influence was always used for the honor, dignity, and progress of his profession. To him in an eminent degree belongs the credit of breaking up the polypharmacy of the past by contrasting the powers of nature with the powers of drugs. Had his influence accomplished nothing more than this, it would have sufficed to add lustre to his name and fame for generations to come. But, Mr. President, his professional distinction needs no eulogy in this presence, and it is only at your special request that I venture to offer the following resolutions to be entered as customary and proper upon the records of our society:—

*Resolved*, That the Suffolk District Medical Society recognizes in the death of Dr. Jacob Bigelow the loss of one of its oldest, wisest, and most influential members, whose long and brilliant professional life was from beginning to end one of patient industry, unsullied integrity, and unvarying regard for the honor and dignity of his calling; that his unrivaled learning and wisdom and his power of accurate observation have served greatly to strengthen the foundation of medical science and practice; and that as a society we urge his example upon all who may succeed him as one worthy of close imitation. *Resolved*, That the foregoing be entered upon the records of the society.—DR. H. W. WILLIAMS did not wish the occasion to pass by without speaking of Dr. Bigelow, for he had known him for many years, and his career, though perhaps but little familiar to the younger members of the profession, had been a very brilliant one. He had done an infinite amount of good to the profession by showing that disease is self-limited, and he was greatly distinguished as an investigator in and an authority on medical botany. His mind remained clear to the last, and he calmly resigned himself to the infirmities which his great age brought upon him.—DR. BOWDITCH heartily coincided with the remarks of Dr. Williams and Dr. Lyman, and spoke of a conversation which he had with Dr. Bigelow in his ninetieth year, saying that it was one of the most remarkable that he had ever had with any one.

*Dr. J. B. S. Jackson.*—DR. F. MINOT read the following regarding the death of Dr. J. B. S. Jackson: In noticing officially the decease of our late Fellow, Dr. J. B. S. Jackson, we would express our high appreciation of his character and of his professional ability. His name has been identified with the subject of Morbid Anatomy for more than thirty years, during which time he was indefatigable in the study of his favorite pursuit, and eminently successful in teaching it. His contributions to the science of pathology have done much

for the advancement of medicine, while his zeal in the search after truth, his simplicity, modesty, and conscientiousness have made his life worthy of admiration and of imitation.

*Pulmonary Thrombosis.* — DR. E. CHENERY read a case of thrombosis, which is reserved for publication.

*Tuberculosis simulating Typhoid Fever.* — DR. F. MINOT read a case of supposed tuberculosis simulating typhoid fever, which will be published in full.

*Osteoclasty.* — DR. ARTHUR CABOT read a paper on osteoclasty, and exhibited two children operated on by him with most excellent results.

*Disinfectants.* — DR. H. I. BOWDITCH made some remarks on Wheeler's disinfecter for water-closets, highly recommending it for general use from the experience which he had had of it in his own house.

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### ROGERS ON THE GREAT PHYSICAL FORCES.<sup>1</sup>

DR. ROGERS thinks that the current theories regarding the production and dissemination of sunlight and sun-heat are altogether too severe a tax upon his credulity and common sense. Accordingly he has written a book in which he exposes the unsatisfactory features of the combustion and nebular hypotheses, and at the same time propounds a great number of conundrums in the form of exclamatory interrogations, which bristle with large adjectives of the superlative degree.

Having proven that the sun is a failure as a stove, he converts it into a huge electrical magnet, which, acting in unison with the earth as another element, generates a "grand magnetic circuit." The sun is likened to an electro-magnetic battery, which, though a "developer of light, heat, and power," is itself "neither luminous, hot, nor magnetic." On this theory it is not necessary to suppose that the sun is luminous or even warm, but it is cool and habitable, and emits no light.

The "grand magnetic circuit" is the source of light and heat, and this "stupendous magnetic circuit" occupies a cone-shaped space between the sun and earth. The aurora borealis is the return current.

The "enormous magnetic circuit" is the key-note to Dr. Rogers's theory, and to the correlation of all physical forces. No problem of nature can present itself which this "gigantic circuit" cannot render instantly luminous, and as the author exposes to us all the possibilities of this "immense magnetic circuit," we are reminded of the judge's enthusiastic faith in the possibilities of "this glorious climate, Californy."

But Dr. Rogers's theory has a moral aspect worthy of consideration. He assures us that, "beyond the boundaries of the solar cone, *no light is*," and therefore "the boast of the atheist that God is wasteful and a bungler, in that he wastefully scatters his sunlight and sun-heat in all directions into space, is set at naught."

Among other things, the author informs us that "light is ascertained to be

<sup>1</sup> *New and Original Theories of the Great Physical Forces.* By HENRY RAYMOND ROGERS, M. D. Published by the author.



as veritable a substance as water." It passes through space instantaneously. "All space may naturally be regarded as a complete vacuum, thus presenting no resistance or obstacles to the free progress of the retroacting elements." Distance is then virtually annihilated. "The fields, forests, rocks, and seas only absorb light; they do not reflect it."

In reading the above quotations it may be well to remember that Dr. Rogers modestly repudiates all claim to infallibility, and craves indulgence for crudities.

### SANITARY CONDITION OF BOSTON.

In looking through the Board of Health records for 1878 we find matter of especial interest in the statistics of *scarlet fever*, *diphtheria*, and *typhoid fever*. During the entire year 848 cases of scarlet fever were reported. Of these the largest number occurred in January (158) and in December (120), the smallest number in July (24), after which month there was a steady increase. Computing by wards we find the largest number of cases thus distributed: Ward One, 60; Ward Two, 79; Ward Fourteen, 60; Ward Twenty-Four, 76. The smallest number occurred as follows: 12 cases in Ward Seven; 15 in Ward Ten; 13 in Ward Twenty-Two. The number of deaths from scarlet fever was 68. The largest number occurred in December, none in September.

Of *diphtheria* 1370 cases were reported. Computing by months, the largest number occurred in January (241) and February (188); the smallest in August, namely, 45. By wards the smallest number was reported in Ward Ten, namely, 16 cases; the largest number in Ward Eight, namely 129. In East Boston there were 231 cases equally divided between Wards One and Two. The number of deaths from diphtheria was 450: 53 in January, 52 in December, 47 in June, 43 in March, 38 in February, etc., so that apparently the disease is but little influenced by the season. The smallest number of deaths in one month (22) occurred in September.

The non-fatal cases of *typhoid fever* are not reported. The number of deaths from this disease for the year 1878 was 120, the largest number occurring in January, namely, 15. The deaths then fell to four in February. In August and September there were 13 deaths in each month, and seven deaths each in the months of November and December.

These statistics suggest the following considerations: The imperfect condition of our drainage system naturally would lead us to expect a predominance of cases of typhoid fever, but the statistics as given show only 120 deaths by typhoid fever during the past year, while the death-roll of diphtheria amounts to 450 cases, or nearly two and one half times as many deaths as were caused by scarlet fever and typhoid fever together. This gives rise to the question as to whether sewer-gas poison be not more fruitful of diphtheria than of typhoid fever. It will also be noticed that the death-rate in diphtheria — 30.4 per cent. — is perhaps low, when, in addition to the virulent nature of the disease, we consider that many of the patients lived in unfavorable districts, amid squalid surroundings, and probably received imperfect attention. This being granted, we again would call attention to the total of cases of

diphtheria, 1370. This is a large number for a city of 300,000 inhabitants, the disease not being unusually prevalent. These considerations lead us to an emphatic doubt, namely, as to whether the 1370 reported cases were all diphtheritic. It is well known that the average homœopath calls every patch of cheesy exudation from enlarged follicles diphtheritic, and some members of this school have more cases of diphtheria in one season than, barring epidemics, men of other medical practice see in a life-time. Again, practitioners of every school who are unfamiliar with follicular disturbances in the throat are led into a diagnosis of diphtheria where there is not a characteristic sign of the disease in the case. We consequently think there is no reason for alarm because of the predominance of diphtheria over other affections.

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#### MEDICAL NOTES.

—The profession not of Cincinnati alone, but of the whole country, has experienced a loss to be deeply deplored through the death of Dr. Landon Rives Longworth. He was struck down by pneumonia in his prime, at the age of thirty-three, having done enough to make his friends sure that if he had been spared he would have been a very distinguished man. He graduated at Harvard in 1867, and went abroad to study art. He was gifted both with taste and ability in the very different, if not opposed, fields of music and painting. He required, however, a more active life, and in 1870 he began the study of medicine. He graduated at the College of Physicians and Surgeons in 1873, and took the faculty prize for his essay on The Ligature of the External Carotid. He then passed a year or more in Europe, spending most of his time, we believe, at Vienna and Strasburg. In the latter city he studied with Waldeyer, and published in the *Archiv für Mikroskopische Anatomie* a paper on the terminal coils of nerves found in the conjunctiva. This paper was of decided merit, and entitled its author to be reckoned among histologists. Within a few years he was appointed professor of descriptive anatomy and clinical surgery at the Medical College of Ohio. Beside his taste for art he was an adept in physical science, and devoted much time to experiments in electricity, and to anatomical injections. For some of these facts we are indebted to a sketch of Dr. Longworth's life by his friend Dr. Forchheimer, but the writer of these lines can give his own testimony to the richness of the intellect and the excellence of character of the colleague we have lost.

—After nearly ten years of most devoted service at the McLean Asylum, about seven of which will have been spent in the responsible office of medical superintendent, Dr. Jelly retires, next June, from a position which he has held so honorably, and with a devotion to duty and unselfishness which will long be most gratefully remembered by the many persons whose privilege it has been to know him as physician and friend. He intends to devote some time to well-earned rest and study in Europe, and then engage in practice in Boston, where his friends will be glad to hear that he means to give a considerable part of his attention to the specialty of mental diseases.

—Dr. Forestier, of Lyons, reports two cases of poisoning in infants fed

from the bottle, both of which he considers due to the use of white vulcanized rubber nipples. The symptoms were similar to those of poisoning by sulphide of carbon, and this substance is used in vulcanizing rubber. Since warnings of this nature have been frequent, it seems singular that physicians will allow mothers to make use of any other nipple in artificial nursing than that made from pure rubber.

—Physicians who wish to obtain that rare article, a good bandage, will do well to refer to an advertisement in the present number. The very best quality of cloth and every desirable width and length are to be obtained. Coming as they do in assorted lots in boxes, they are exceedingly convenient for office use. The luxury of a well made bandage is hardly appreciated by those who have not had access to a supply of the best quality.

—Professor Chauffard of the Paris faculty is dead.—In Paris a prize of £400 is open to biennial competition. It is to be given to the author of the best paper on pulmonary consumption or typhoid fever, these subjects alternating in successive competitions. The prize is known as the Prix Lacoze; any country may compete.—A new archive of clinical medicine will soon appear in Berlin under the editorship of Frerichs and Leyden.

—As whooping-cough is epidemic in this city at present, we give the following quotation from a German exchange made by the *Chicago Journal*: Although turpentine inhalation is an old method of treatment, Dr. Gerth cured a case of laryngeal catarrh by placing twenty drops of turpentine on a handkerchief, held before the face, and causing about forty deep inspirations to be taken. Repeating this thrice daily, the cure was quite rapid. In the same family he found an infant fifteen months old in the convulsive stage of whooping-cough, exhausted, and vomiting all ingesta. There was at the same time bronchial catarrh with slight evening rise of temperature. Gerth decided to experiment here also with turpentine. He directed the mother to hold the moistened cloth, as above, before it when awake, and to drop the oil upon its pillow when asleep. The result was most happy. Within the twenty-four hours the frequency and severity of the attacks notably diminished. The child's strength was sustained by stimulants, and improvement was very rapid. Within a year pertussis became epidemic in this vicinity, and he repeatedly tested the drug in this way. He gave it to children of all ages, and in any stage of fever. The initial catarrh, the convulsive and the final catarrhal stages, were all decidedly benefited, the spasmodic attacks being in many cases aborted.

#### NEW YORK.

—The first practical result of the recent tenement-house agitation has been the combination of a number of gentlemen of means to erect a model building, two hundred feet square, after the general plan of the Peabody flats in London. It is proposed to have a court in the centre, containing a fountain and growing plants, and with an entrance from each of the three streets on which the building fronts; while each room of every suite of apartments will receive an abundant supply of light and fresh air.

—The diagnosis of trichinosis in the supposed case of the disease reported from Brooklyn a short time since has now been confirmed by the death and

post-mortem examination of another of the individuals who partook of the same ham. The autopsy was made in the presence of a number of prominent physicians, and it was found that death resulted from embolism of the pulmonary arteries, due to trichinosis. Trichinæ, in the first, second, and fully developed stages, were also found abundantly in the laryngeal and intercostal muscles and in the diaphragm. Specimens of affected muscle were afterwards exhibited at the office of the sanitary superintendent, Dr. Raymond, and under a low power of the microscope the trichinæ could be readily seen lying scattered about in incomplete coils. In a bit of muscle about the size of a pea, twenty-three could be counted without difficulty.

—The death is announced of the "Mormon Giant Girl," who formerly traveled with Barnum, and has of late been on exhibition at a Bowery museum. Although only eighteen years of age, she weighed 516 pounds, and her coffin was six feet six inches in length, and two feet in width. An unusual number of extraordinary specimens of the human race have recently been on exhibition in New York, including the "North Carolina Twins" or "Double-Headed Nightingale," the "St. Benoit Twins," which were described last summer in the Boston Medical and Surgical Journal, and the remarkable dwarfs known as the Midgets. A number of well-known physicians were invited a short time since to make a physical examination of the latter. They are about twenty-two inches in height, and the weight of the boy, who is said to be fourteen years of age, is nine pounds; while the girl, who is fifteen, with the long train and all the other appurtenances of a lady of fashion, or rather of a modern French doll, actually weighs only four pounds and three quarters. The diameters of the boy's head, as ascertained by Dr. H. T. Hanks, professor of obstetrics in the Dartmouth Medical School, are scarcely larger than those of the average new-born infant, and those of the girl are even smaller. One was born in Central New York and the other in Mexico. The boy was found to be suffering from a little bronchitis, and after some of the physicians had made an examination of his chest it was very amusing to watch his little companion practicing percussion and auscultation upon him in imitation of their proceedings. The girl is beginning to show signs of the approach of puberty, but has not menstruated as yet. Her parents state that when she was born she weighed only three quarters of a pound, and was but nine inches in height.

—Mr. Henry Bergh, the president of the American Society for the Prevention of Cruelty to Animals, carries his humane principles so far that he is willing to test the virtues of various compounds that are sent him for the relief of the sufferings of the brute creation upon his own person. In a letter which he recently addressed to the proprietors of a certain quack lotion, he says: "I have not yet had occasion to apply it to animals, but I have done so to myself, and have received immediate relief. Being an animal myself, I have every reason to believe that brute creatures would experience similar benefit from its use; and this society will so employ it whenever the necessity shall present itself."

—The body of a young man who was recently found in a comatose condition from the effects of opium, on a Hudson River Railroad train upon its arrival in the city, and who died shortly after his removal to Bellevue Hos-

pital, has been identified as that of one of the students during the late winter course at the medical department of the New York University. At the examination for degrees at the close of the session he failed to pass successfully, and it is believed that it was in consequence of his disappointment and mortification on account of this that he committed suicide. It seems that he had made up his mind to return to the college and pursue his studies during the spring course, with the idea of coming up again for examination in June; but while on his way to the city his courage must have failed him, and he took laudanum. On his person was found a paper on which he had written the words, "I am discouraged."

—Among the numerous recent commencements was that of the "United States Medical College," an irregular institution which was only incorporated May 28, 1878, and in which the first course of lectures was begun only in October last. Yet, notwithstanding this, degrees were conferred on six graduates. The "faculty" claim that all these had been students at other colleges for the requisite period; but the matter would certainly demand an investigation.

#### WASHINGTON.

—In accordance with the provisions of the Bureau of Public Health bill recently passed by Congress, Dr. John S. Billings, United States army, and Dr. F. M. Gunnell, United States navy, have been appointed. Dr. Gunnell has declined in favor of Dr. Thos. J. Turner, who has been appointed in his stead.

—The president has sent to the senate the nomination of Dr. J. B. Hamilton to be supervising surgeon-general of the marine hospital service in the place of the late Dr. Woodworth. Dr. E. Hebersmith, the senior officer in the service, and stationed at New York, in an interview with a *Tribune* reporter, says, "Although standing No. 5 on the list of surgeons, his seniors waive all right to the position by reason of seniority. After passing a creditable examination he entered the army, and served on the frontier. He afterward resigned, and in 1875 appeared before the board of examiners of the marine hospital service, an entire stranger to all, and in a competitive examination obtained the best record in a class of fifteen. He was ordered here as my assistant, and on my recommendation was placed in charge of the marine hospital at Boston two years ago, where he has earned an excellent record in the administration of that hospital. During his first year he reduced the expenditures three thousand dollars. Dr. P. H. Bailhache and myself, as a committee, called upon the president and Secretary Sherman a few days ago, and expressed the views and wishes of the other officers. We feel this to be a critical period in the existence of the service. If the next surgeon-general is taken from outside the corps to fill the vacancy, then the system established by the incessant labors of Surgeon-General Woodworth will be destroyed. A pressure is brought to bear on the president to appoint men outside of the service, among whom are Drs. A. N. Bell, C. C. Cox, and Newell, and a Southern doctor. It is thought that these men hope to gain membership in the National Board of Health through this position, but it is the wish of the service that the surgeon-general shall not be a member of that board, but that one of the subordinates should be designated as in the army or navy."

## CHICAGO.

— The authorities of Rush College have established two new chairs in the regular faculty in addition to that of gynecology: one of dermatology and venereal diseases, to which Dr. J. N. Hyde has been appointed professor, and one of orthopædic surgery, to which Dr. John E. Owens, surgeon to St. Luke's Hospital, has been called.

— At the alumni meeting of the Chicago Medical College, held recently, steps were taken to aid the college in the establishment of a physiological laboratory. A subscription paper was started, and several hundred dollars were subscribed.

— During the last few months in parts of the city an epidemic has prevailed of simple pharyngitis. In some cases the follicular form has appeared, but everywhere the cases have been mild, and so the mortality lists take no account of the fact. Generally the cases have been attended with considerable fever for a day or two, and some pain in swallowing, but in very few have any indications of diphtheria appeared.

— The State Board of Health, and more especially its late president, Dr. Ranch, have been receiving some attention from the legislature now in session, without, however, much damage as yet. It would be unfortunate if what we have gained in medical reform should be destroyed, as it might easily be by ill-advised legislation, but there is apparently not much reason to fear it from this session.

— The Cook County Hospital, which has been the subject of remarks in the JOURNAL, is fairly prosperous under a new and more economical internal administration. The medical board, in regard to whose appointment some criticisms were made, seems harmonious and efficient, and is certainly less open to the objection made to its predecessor, that it was under the predominating influence of a single private medical institution.

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ORTHOPÆDIC HOSPITAL, PHILADELPHIA.

## CASES WITH CLINICAL REMARKS BY DR. S. WEIR MITCHELL.

*Migraine in a Child.* — Lizzie T., seven and one half years old, complained of frequent headaches. She is very fair, but of good color; teeth are sound, and not irregular. Family history good, but her mother is also subject to headache. No injury of the head can be recalled, but the trouble came on in August, while playing in the hot sun. She was not unconscious, nor confined to bed after the exposure, but the pain came on suddenly, and was severe; it was accompanied by nausea and vomiting. She had previously been in perfect health, but from that time she has been subject to headache once or twice every week, always accompanied by sick stomach. The headache seems to be getting worse; it always precedes the nausea. She now has attacks at least twice every week, sometimes oftener, coming on generally between noon and evening. She believes that it is not worse in summer than in winter. It is not affected by errors in eating. When the headache comes on, she says that



her eyes get heavy and watery, and the face is flushed, particularly on the left side. The pain is of a throbbing character, which she locates in the forehead, about the middle. There is none at the back of the head. The attack generally lasts a couple of hours, and then terminates in a sick stomach. After the pain leaves her the face becomes pale. At the onset she has occasionally chilly sensations. The eyesight is not affected.

The fact that the headache is not worse during the summer is against the idea of sunstroke. Any one who has been sunstruck is apt to be very susceptible to heat, and exposure always brings on a headache; if a child runs in playing, and overheats itself, it will have the same effect. This seems to be a pretty clear history of hemicranial neuralgia, or migrains, as the English used to call it. There is no pain or tenderness along the spine; her appetite is good. She flushes readily on excitement, is well developed, and of good stature. She has no sick stomach between the attacks, and the bowels are regular. Upon auscultation nothing wrong can be detected in the heart. She never had chills and fever, nor rheumatism.

This is undoubtedly a headache of congestive type belonging to neuralgia, and I have frequently noticed that in such cases belladonna exerts a peculiar influence. In addition to this, small doses of bromide may be given, as large ones generally increase the malady. She shall take

R Potassii bromidi . . . . .	gr. iiij.	20
Tinct. belladonnæ . . . . .	gtt. iiij.	20
Syrup. zingiberis . . . . .	ʒi. 4	
Aquæ . . . . .	q. s. ad ʒij. 8	

three times daily.

When the attack comes on she is to lie down in a darkened and quiet room. Cold applications to the head and a mustard foot-bath might be useful adjuncts to the treatment.

I may add that the use of the old domestic remedy, a tight bandage, during the attack is useful. I make use of a rubber bandage, applied thoroughly from the eyes up, with a thin pad over each temporal artery, if the temporal ridge be sharp enough to keep the bandage from squeezing the arteries, and over the two occipital vessels. Instead of caoutchouc, a well-applied muslin bandage may be put on, and then wetted, using compresses over the temporal arteries. The comfort thus given is sometimes surprising. I need not say that migraine in some of its forms becomes at times, and in women especially, a most disabling malady, and may recur daily until life is a burden impatiently borne. These are usually cases of thin-blooded and thin people, whose sufferings are brought back by the attempt to take exercise, without an abundance of which a return to health is out of the question. I have seen some such cases in which a cure little less than marvelous has been made by the use of absolute rest, overfeeding, and massage. There is of course much more to be said on the therapeutics of migrains, but no one drug is its master. The hint as to thorough bandaging is worth remembering, and especially at the close of a headache.

*Headache; Chronic Meningitis; Opium Habit.* — The patient, a man aged forty-five, has had for many years intense and almost constant parietal head-

ache. It is not due to syphilis, and there is some probability that it may be of thermal origin. It is worse at night and in the sun; also, if I percussed the skull with a rubber-tipped percussion hammer, when I got over the pain areas, there was pain given by the blow. Amyl nitrite made the headache worse. Intense heat or cold eased it. The eyes were normal. He had acquired the habit of using morphia to the extent of about five grains daily in hypodermic injections. With the knowledge of this comes the first doubt in the case. I ask myself if he has as much pain as he says he has. The opium habit destroys the normal standards, and leaves him uncomprehensible. If A or B tells me he has pain, I compare it with my notions of pain as he describes its degrees, for we have, unluckily, no algometer or pain measurer; but our conceptions of pain fail us in opium cases, and I think they do so for a very good reason, which I can best illustrate by an example of what may happen in the senses of sight and hearing.

Let us take a not uncommon case: An eminent lawyer from a neighboring county consulted, me, some years ago, for noises in and confusion of his head. His deafness of course caused me to study his ears, when, to my surprise, I found them literally packed with wax. On removing this the drums proved to be singularly healthy, and did not appear to have been compressed. Within a few moments the noise heard in my rooms from the street became overpowering. The tick of the clock, the sound of my voice, and so on, were painfully appreciated. I stuffed the ears with cotton, and twice my patient, thus guarded, attempted to leave my house. Each time he returned, driven wild by the tumult of unaccustomed noises. At last, with other precautions, he went his way, but was forced for a long while to guard his ears from the pain caused by ordinary sounds.

In this case the seclusion from all save very loud sound had lasted many years, and as there was continual effort to hear, nothing was lost, but rather a great acuteness of hearing was gained. Small sounds became great to him, and it was a long while before he got back to the normal standard.

If, in like manner, a man accustoms himself to darkness, or habitually wears tinted glasses, exposure to any bright light becomes painful.

Something analogous to these examples seems to me to be seen in cases where suddenly a long and large use of opium or morphia is abruptly given up. In place of permanently dulling the capacity to feel pain, morphia seems rather to sharpen it, as if disuse, or what I might call the muffling of the nerves and centres, left them with an increased power to feel. So much for the analogies. We have still to remember that a man who has sheltered himself more and more from pain also loses the habitually cultivated power to endure pain. Out of these facts arise some of the difficulties of putting an end to the morphia habit. The disease or pain for which it was begun may have passed entirely away, but the moment the drug is given up the patient is apt to describe himself as having pain in many places, and as suffering, not only immense unease, but also distinct physical torment. It is impossible to disbelieve these statements of real suffering, and I can explain them reasonably only by the aid of such analogies as are offered by cases of long disuse of some of the other senses.

When the patient entered, and I made up my mind as to the nature of his case, I reduced the morphia in three days to one third of a grain daily. At the same time I used a severe counter-irritant resembling that advised by Meyer in the general paralysis of the insane. It consists in rubbing into an inch square of shaven scalp an ointment of equal parts of tartar emetic and lard. The swelling and local and general disturbance thus caused are sometimes alarming. In the case before us the suffering seemed to be unendurable, and was eased by a little chloral. On the fifth day the morphia was abandoned. We had then a severe struggle for one day only, the patient becoming wild and at times delirious, and desiring to leave the ward. His head is now quite eased of pain since the scalp has suppurated freely, and he has been ten days free of morphia. He thinks he will never return to it, and is to be discharged in a day or two. I shall, however, expect to hear from him again, and to learn then that upon some return of pain he has once more fallen under the despotism of this enthralling habit. I may add that he has not suffered from the albuminuria or the diabetes so common in old morphia takers.

*Chorea, and its Treatment by Salicylate of Soda.*—About four years ago, Julia M., now seven years old, first noticed a quivering of the eyelids, to which she has ever since then been subject, except that in the summer time, when she goes into the country, she thinks it is always better. Gradually the trembling has extended to other muscles, and last spring there was an exacerbation, and her speech and arms became affected. At present she blinks a great deal, but as far as other muscles are concerned the affection seems to be principally confined to the right shoulder and neck. At the heart there is an apex systolic murmur. The patient never had rheumatism, nor had her parents been sufferers from any joint affection. She had intermittent fever several times, and as a child she had whooping-cough and measles. She is moderately anæmic. There is no relative diminution of power in either hand. She has been taking the following prescription for more than a month, and apparently with decided advantage, each dose containing,—

R̄ Sodii salicylat. . . . .	gr. x.	67
Glycerinæ . . . . .	3 i.	4
Spts. lavendulæ . . . . .	℥v.	33
Ol. gaultheriæ . . . . .	gtt. ʒ	01
Aquæ . . . . .	q. s. ad ʒss	q. s. ad 16

given three times a day.

I have been experimenting a little in this case and in a number of others concerning the effects of salicylate of soda in chorea, and it looks as if the experiment would prove to be of some value. The fact should not be overlooked, however, that the tendency to recovery of these choreic cases in the fall of the year is so great that it confuses all therapeutic observations. My colleague, Dr. Gerhard, who also used salicylic acid in chorea, at my request, has made a more exact study of results and time of treatment than I have done, and is satisfied, I believe, that it is a valuable aid in chorea. Using it first in cases complicated by rheumatism or much pain, I have now begun to use it more freely, and in all choreas. After we have had our usual spring crop of choreas, I shall have more to say either for or against the use of salicylic acid and its salts.

I made some time back an effort to learn if chorea is found as often in the black as the white, and to my inquiries I received a mass of interesting answers, which I hope to make use of as soon as I learn more of the prevalence of chorea among these races in the tropics. At present I incline to the belief that the black is very much less liable than the white. I have learned also many other curious facts as to the geographical distribution of chorea, and as to its tendency to recur in the spring-time. I should very much like to know if it displays this same peculiarity in England.

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#### FAMINE AND PESTILENCE IN BRAZIL.

MR. EDITOR, — From the official reports made to the department of state and to the surgeon-general of the marine hospital service by the United States consuls at the ports of Brazil, it appears that famine and disease have prevailed in that empire to an extent unparalleled in modern history, more than one half of the population of the affected districts having succumbed to the combined influences of disease and starvation.

Ceará is one of the northeast coast provinces of Brazil, with an area of four thousand seven hundred square miles and a normal population of nine hundred thousand. In the vernacular, the interior is designated the "Sertao," to distinguish it from the coast region, and the inhabitants "Sertaregos." The country was wholly an agricultural one, with a generally thrifty population. There is not a navigable river in the province, but the Sertao is irrigated by numerous small streams flowing direct to the ocean. The climate of the interior is very hot and dry, being somewhat modified near the coast by the sea breezes. The rainy season extends from January to June, and no rain falling during the rest of the year the streams become dry, and great distress sometimes prevails. Since the summer of 1876 a terrible drought has existed, no rains having fallen in the province from that time to the close of January, 1878, a period of two and a half years, and the once fertile and luxuriant Sertao, where farms and villages prospered in peace and plenty, now presents the appearance of a vast blackened desert burnt over by fire.

The winter of 1877 passed without the customary rains, and the burning heats of the succeeding spring and summer being unrelieved by a drop of rain, the crops failed, and much distress and suffering prevailed; the hopes of relief by the anticipated rains of the succeeding January were not realized, the pitiless drought still continued, and in the spring of 1878 there came to the coast cities "appalling news of famine, disease, dead cattle, and dying, despairing people. The distressed Serteragos diligently practiced their public religious rites, and beat, cut, and punished themselves in the desire to appease an offended Deity. Provisions advanced enormously in price, and many of the people were reduced to subsistence on roots, cotton pods, reptiles, and insects, on the indigenous mucuna bean (which produces dropsy), and on any living or dead thing that would sustain life, and hunger goaded many even to cannibalism.

The depressing vital influences following the want of the necessities of life soon made themselves apparent in the outbreak of typhus and other fevers among the people, and to increase the unimaginable horrors of the situation

small-pox appeared in epidemic form, and in the spring of 1878 the mortality became frightful. By this time the distress had become unendurable, and a general flight of the inhabitants from the interior to the sea-coast commenced. The coast cities received a great influx of starving, diseased Sertaragos, the normal population of twenty-five thousand in Ceará, or Fortaleza, the capital of the province, being quickly increased to one hundred thousand. The open squares of the city were filled with thousands of unsheltered people, emaciated from starvation and smitten with small-pox and other loathsome diseases.

The residents of Ceará did everything in their power for the relief of the unfortunate people, and as soon as the gravity of the situation was recognized the imperial government dispatched every ship that could be obtained, loaded with food and supplies, to Ceará; but these measures of relief only mitigated the prevailing distress, and during the spring of 1878 in the streets of Ceará and the other coast cities scenes of suffering and distress were presented that have few parallels in history.

The suffering from famine was relieved by the efforts made, but small-pox and other diseases continued their ravages unchecked. The ordinary mortality of Ceará is about nine hundred deaths per annum, but since the influx of refugees from the interior it has been increased beyond all comparison. Between November 1st and January 1st the deaths from small-pox alone numbered twenty-eight thousand seven hundred, the total mortality for the two months being thirty-one thousand five hundred and seventy-one. In the new cemetery of Lagoa Funda, opened in the middle of last year, there had been sixty thousand burials up to January 1st. In the sandy soil of the cemetery, trenches six feet in depth and long enough to contain twelve uncoffined corpses were dug, and into these three or four additional bodies were hastily crowded when the corps of grave-diggers could not keep pace with their arrival. The air for nearly a mile around the cemetery is strongly impregnated with the effluvia emanating from the bodies. One half of the original population of Ceará have died of small-pox. Of fifteen thousand "Sertaragos" who fled to Parahyba twelve thousand died, and the place is nearly depopulated. Similar distressing accounts are given of the other coast cities. Official advices state that the ordinary population of Ceará was nine hundred thousand, of whom five hundred thousand have died of disease and starvation. The general want of knowledge or practice of the most elementary principles of individual or public hygiene, the rarity with which vaccination is practiced, conjoined with the depressing influences of the prevailing famine, rendered the people an easy prey to contagious disease after it once gained a foot-hold, and explain the almost unprecedented mortality that has prevailed. The Brazilian government has expended over twelve million dollars for the relief of the sufferers, public works have been inaugurated for giving them employment, and the large numbers herded together in the coast cities have been diminished by the transportation of many of them to other districts. By these measures the prevalence of disease has been much reduced during the past month, and as the last advices report that the first rains for two and a half years have lately fallen in the Sertao, it is hoped that the worst features of the combined scourges of famine and pestilence have been manifested.

R. W.

## SHORT COMMUNICATIONS.

## LARGE QUANTITY OF ASCITIC FLUID.

MR. EDITOR,—On the 10th inst., Christopher C. Wingo, M. D., of Newport, Va., assisted by his son, Dr. Charles Wingo, and Dr. Dewey Ribble, of Blacksburg, Va., performed an operation for ascites on Mr. N. H. Criner, of Giles Co., Va. By means of trocar and canula between ten and eleven gallons of fluid were removed from the patient's abdomen, *probably the largest quantity ever taken from one person at one time.* The patient bore the operation bravely, was much relieved, slept well the following night, and at last accounts was cheerful, gaining strength, and without any indications of peritonitis or other trouble.

ALLEGHENY TABLELANDS, VA., March 12, 1879.

H.

## REPORTED MORTALITY FOR THE WEEK ENDING MARCH 15, 1879.

Cities.	Population estimated for July, 1879.	Reported Deaths in each.	Annual Death-Rate per 1000 during the Week.	Percentage of total Deaths from					
				The Principal "Zymotic" Diseases.	Pneumonia.	Diphtheria and Croup.	Scarlet Fever.	Diarrhoeal Diseases.	
New York.....	1,085,000	604	29.03	19.53	13.41	3.48	8.94	2.33	
Philadelphia.....	—	284	—	—	—	3.52	4.23	—	
Brooklyn.....	564,400	235	24.18	20.00	13.62	8.51	7.66	—	
St. Louis.....	—	102	—	—	15.68	3.92	—	0.98	
Chicago.....	—	145	—	22.76	10.35	15.17	2.07	0.69	
Baltimore.....	365,000	135	19.29	14.00	9.72	5.18	5.18	—	
Boston.....	360,000	159	23.02	15.72	11.32	6.29	8.14	2.58	
Cincinnati.....	—	112	—	26.79	10.71	2.68	16.07	0.89	
District of Columbia.....	160,000	88	28.68	6.38	21.59	1.06	3.18	—	
Pittsburgh.....	—	54	—	24.07	3.70	9.22	1.84	—	
Milwaukee.....	—	41	—	31.95	12.19	24.39	—	2.44	
Providence.....	101,000	39	19.99	15.38	7.69	10.32	2.58	—	
New Haven.....	—	20	—	—	5.00	—	—	—	
Charleston.....	—	19	—	10.53	10.53	5.27	—	—	
Lowell.....	53,300	17	16.63	5.88	11.77	—	—	—	
Worcester.....	52,500	17	16.88	11.77	11.77	11.77	—	—	
Cambridge.....	51,400	25	25.35	20.00	28.00	16.00	4.00	—	
Fall River.....	48,500	—	—	—	—	—	—	—	
Lawrence.....	38,200	11	15.02	—	—	—	—	—	
Lynn.....	34,000	19	29.15	15.80	5.25	15.80	—	—	
Springfield.....	31,500	9	14.90	11.11	11.11	—	11.11	—	
New Bedford.....	27,000	14	27.03	7.14	42.86	7.14	—	—	
Salem.....	26,400	10	19.75	—	10.00	—	—	—	
Somerville.....	23,350	4	8.93	50.00	—	50.00	—	—	
Chelsea.....	20,800	4	10.03	25.00	—	—	—	25.00	
Taunton.....	20,200	6	15.49	16.67	16.67	16.67	16.67	—	
Holyoke.....	18,200	6	17.19	33.33	16.67	16.67	—	—	
Gloucester.....	17,100	3	9.15	—	—	—	—	—	
Newton.....	17,100	—	—	—	—	—	—	—	
Haverhill.....	15,800	7	23.86	28.57	—	28.57	—	—	
Newburyport.....	13,500	5	19.31	—	20.00	—	—	—	
Fitchburg.....	12,500	3	12.51	—	33.33	—	—	—	

Two thousand one hundred and ninety-seven deaths were reported: 370 from the principal "zymotic" diseases, 335 from consumption, 243 from pneumonia, 125 from scarlet fever, 85 from diphtheria, 68 from bronchitis, 49 from croup, 30 from whooping-cough, 26 from typhoid fever, 23 from diarrhoeal diseases, 19 from erysipelas, five from cerebro-spinal meningitis, five from measles, none from small-pox. The total mortality, and from scarlet fever, is about the same as for the previous week; from whooping-cough, bronchitis, and cerebro-spinal meningitis decreased; from the remaining principal "zymotic" diseases and from consumption and pneumonia increased considerably. Philadelphia reported 38 deaths from acute pulmonary diseases, not included above, being about the same as for the previous week.

From bronchitis, 28 deaths were reported in New York, nine in Brooklyn and Cincinnati, four in St. Louis and District of Columbia, three in Pittsburgh and New Haven, two in Chi-



cago and Providence. From *whooping-cough*, 16 in New York, four in Cincinnati, three in Boston, two in Brooklyn and Pittsburgh, one in St. Louis, District of Columbia, and Milwaukee. From *typhoid fever*, six in Philadelphia, four in New York and Chicago, three in Baltimore, two in St. Louis and Pittsburgh, one in Brooklyn, Boston, Cincinnati, Providence, and Charleston. From *erysipelas*, seven in New York, four in Brooklyn, Boston, Cincinnati, Providence, and Cincinnati, one in Baltimore, Boston, District of Columbia, and Pittsburgh. From *cerebro-spinal meningitis*, one in New York, Chicago, Baltimore, Boston, and Lowell. From *measles*, two in Brooklyn and Pittsburgh, one in New York. From *trismus nascentium*, one in Charleston and District of Columbia. From *typhoid malarial fever*, one in District of Columbia. The death-rate in District of Columbia was 21.07 among the whites, and 43.33 for the colored population. Nashville remains quite free from "zymotic" diseases, but pneumonia is very prevalent. In Cleveland pulmonary diseases, especially pneumonia, prevail; the severe epidemic of diphtheria has apparently declined. In Louisville, New Orleans, and throughout California, pneumonia has been very wide-spread. In Buffalo and Richmond scarlet fever still prevails. Small-pox is very fatal in Havana, and a bark has arrived from that port at the quarantine station in New Orleans with many cases of yellow fever on board. There have been two deaths reported from "typhoid malarial fever" in New Orleans. The returns from seventeen of the nineteen cities in Massachusetts, with an estimated population of 816,250, showed a decreased mortality from scarlet fever, erysipelas, and typhoid fever; about the same from whooping-cough and cerebro-spinal meningitis; slightly increased from the remaining "zymotic" and from the pulmonary diseases.

Sergeant Purcell's meteorological record for the week, in Boston, is as follows:—

Date.	Barom-eter.	Thermom-eter.		Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather.			Rainfall. (Melted Snow.)			
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7 A. M.	2 P. M.	9 P. M.	Daily Mean.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	Duration in Hours.	Amount in Inches.
March 9	30.245	31	34	26	88	89	79	85	O	S	S	0	10	8	O	O	C	0.6	.06
" 10	30.059	46	61	32	100	67	62	76	S	W	W	4	8	7	R	C	C	—	—
" 11	29.826	44	59	34	92	58	45	64	SW	W	W	15	12	24	O	F	C	1.2	.71
" 12	30.079	34	41	30	69	31	57	62	W	NW	NW	15	19	10	F	F	C	—	—
" 13	30.025	39	46	26	72	43	60	58	W	SW	SW	5	18	10	F	F	C	—	—
" 14	29.805	39	46	35	90	91	100	93	O	E	N	0	10	6	O	O	R	7.5	.22
" 15	29.926	32	42	26	69	39	57	55	W	W	NW	15	19	10	C	C	C	—	—

Weekly Summary.	Barometer.	Thermometer.	Humidity, Saturation being 100.	Wind.	Rain.
	Mean 29.996	Mean 38.3	Mean 69.3	Total miles traveled, 1318.	Total amt. 0.29 in.
	Max. 30.363	Max. 61	Max. 100		
	Min. 29.652	Min. 26	Min. 23	Prevailing direction, W.	Duration, 9 hrs. 25 min.
	Range .711	Range 35	Range 77		

Barometer corrected for temperature, elevation, and instrumental error.

Explanation of weather symbols: O., cloudy; C., clear; F., fair; G., fog; H., hazy; R., rain; S., snow; L. S., light snow; T., threatening.

Station: Latitude 42° 21'; longitude 71° 4'; height of instrument above the sea, 77.5.

For the week ending February, 22d, in 149 German cities and towns, with a population estimated at 7,512,707, the death-rate was 27.7, an increase of 1.3 from the previous week. There was no very great change in the fatality from "zymotic" diseases, except an increase in the number of places where typhoid fever prevailed. A very much greater fatality from diarrhoeal diseases in children, especially in Berlin and Munich. Acute lung diseases were less fatal, consumption much more so. The typhus fever is not spreading, but rather diminishing. Six hundred and forty deaths were reported from consumption, 450 from acute pulmonary diseases, 189 from diarrhoeal diseases, 184 from diphtheria and croup, 71 from scarlet fever, 55 from whooping-cough, 53 from typhoid fever, 32 from measles, 31 from puerperal

fever, five from typhus fever, one from small-pox (in Ratisbon). The death-rates ranged from 13.9 in Lübeck to 41.2 in Frankfort-on-the-Oder; Dantzic 27.6; Kiel 21; Breslau 33.9; Munich 33.4; Dresden 33.0; Cassel 28.4; Erfurt 28.3; Berlin 23.1; Leipsic 26.1; Hamburg 29.0; Hanover 26.1; Bremen 23.5; Cologne 27.8; Frankfort-on-the-Main 18.4; Wiesbaden 17.8; Metz 40.8.

For the week ending March 1st, in the 20 English cities, having an estimated population of 7,383,999, the death-rate was 26.6, an increase of 1.0 from the previous week: in London 25.5; Portsmouth 19.8; Plymouth 17.6; Birmingham 25.6; Leicester 32.4; Liverpool 33.6; Manchester 34.5; Leeds 30.8. There were in all the cities 514 deaths from diseases of the respiratory organs, showing a progressive increase; 120 from whooping-cough, 103 from scarlet fever, 44 from diarrhoea, 33 from fever, 32 from measles, 16 from diphtheria, and 23 from small-pox (22 in London, one in Manchester). Small-pox caused an increased number of deaths in London, but the new cases apparently are declining in numbers; it is still quite fatal in Dublin, where the total death-rate was 43; in Glasgow 29; in Edinburgh 23.

Small-pox is still rife in St. Petersburg, prevalent in Vienna, Paris, Budapesth, Barcelona, Calcutta, and Bombay; typhoid fever in the Italian cities, Paris, Brussels, and India. No new cases of the pest had occurred at last reports. On the Volga, disinfection by fire, heat, etc., is going on, and the cordon is gradually relaxed. A severe form of typhus fever prevails in parts of Turkey, Roumania, Rumelia, and Russia. In Macedonia a severe epidemic of typhoid fever has been attributed to the consumption of cattle that suffered from bovine typhoid. Great precautions are taken in St. Petersburg in improving the sanitary condition of the city, and in preparations for an increase in the malignant form of "typhus fever," now prevalent there, should it occur. Deaths in various parts of Russia of persons from a disease suspected to be the plague have shown, as always heretofore, that any practicable quarantine or sanitary cordon cannot prevent occasional slips, as some of these suspicious cases came from the quarantined district.

**SUFFOLK DISTRICT MEDICAL SOCIETY.** — A regular meeting will be held at the hall, 19 Boylston Place, on Saturday evening, March 29th, at seven and a half o'clock. The following papers will be read:—

Dr. William F. Whitney. A Case of Cystinuria, with Renal Calculus.

Dr. James Ayer. A Partial Review of Two Thousand Cases of Midwifery.

Dr. D. Hunt. Conservatism in the Medical Profession.

Supper at nine o'clock.

**THE GYNÆCOLOGICAL SOCIETY OF BOSTON.** — The one hundred and first regular meeting of the society will be held at Medical Library Rooms, 19 Boylston Place, on the second Thursday of April, at two o'clock P. M. The profession are cordially invited to be present.

HENRY M. FIELD, M. D., *Secretary*.

At the last meeting of the West Chicago Medical Society the resolution given below was discussed and adopted with great unanimity:—

*Resolved*, That in the opinion of the West Chicago Medical Society, it is the duty of the State Board of Health to procure an amendment of the law relating to the collection of vital statistics, securing the incorporation of those sections of the New Hampshire and Connecticut laws which provide for the compensation of persons who make returns of births and deaths, at the rate of twenty-five cents for each birth or death returned and recorded within the limits of the State.

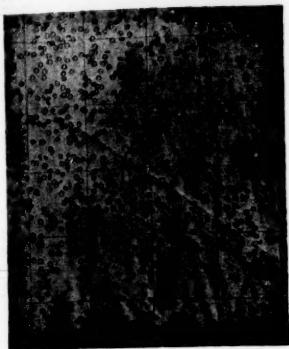
**BOOKS AND PAMPHLETS RECEIVED.** — *Fasting Girls: Their Physiology and Pathology.* By Prof. William A. Hammond, M. D. New York: G. P. Putnam's Sons. 1879. (For sale by A. Williams & Co.)

Forty-Ninth Annual Report of the State Penitentiary for the Eastern District of Pennsylvania. 1878.

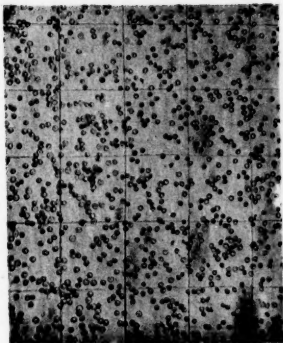
Annual Report of the New England Hospital for Women and Children. Boston. 1878.

Valedictory Address to the Graduating Class of Jefferson Medical College. By Prof. J. Aitken Meigs, M. D. Philadelphia. 1879.

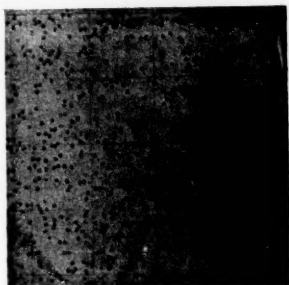
Address of Joseph K. Edgerton, President of the Board of Trustees, Fort Wayne Medical College, Indiana. 1879.



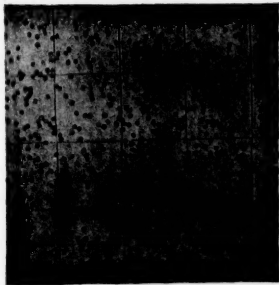
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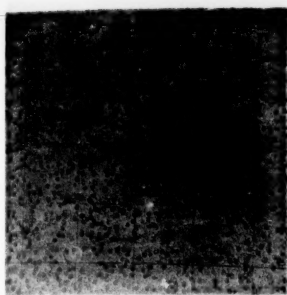


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NOTE. In order to print these plates with greater distinctness, it has been necessary to arrange them in a different order from that in which they are referred to in the text.

*Heliotype Printing Co., Boston.*

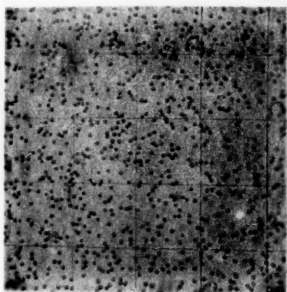




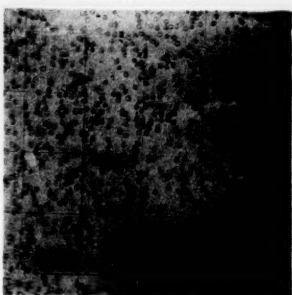
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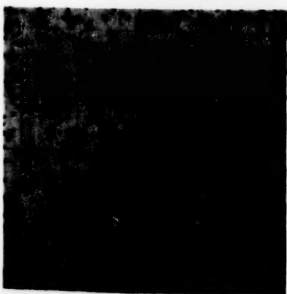
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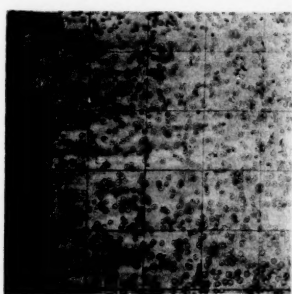
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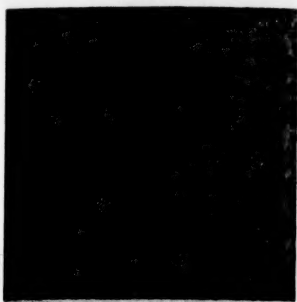
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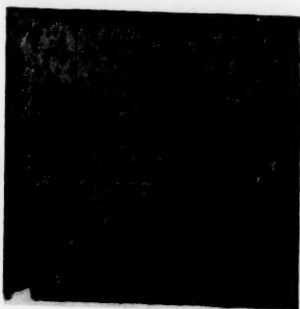
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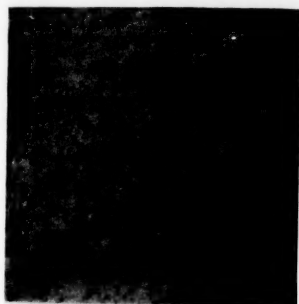




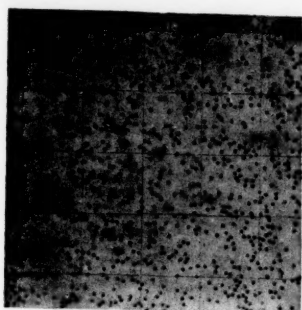
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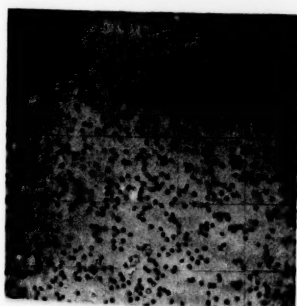
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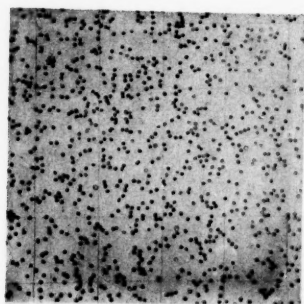
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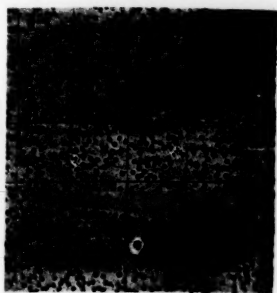


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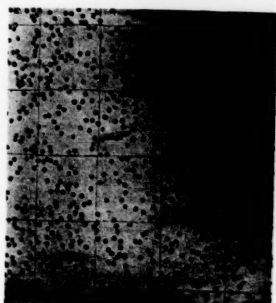




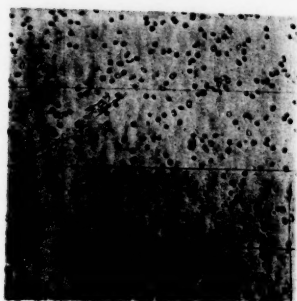
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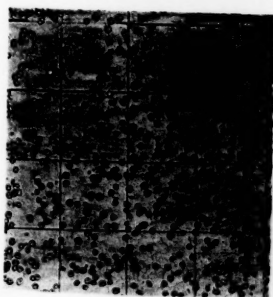
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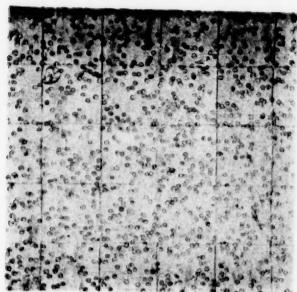
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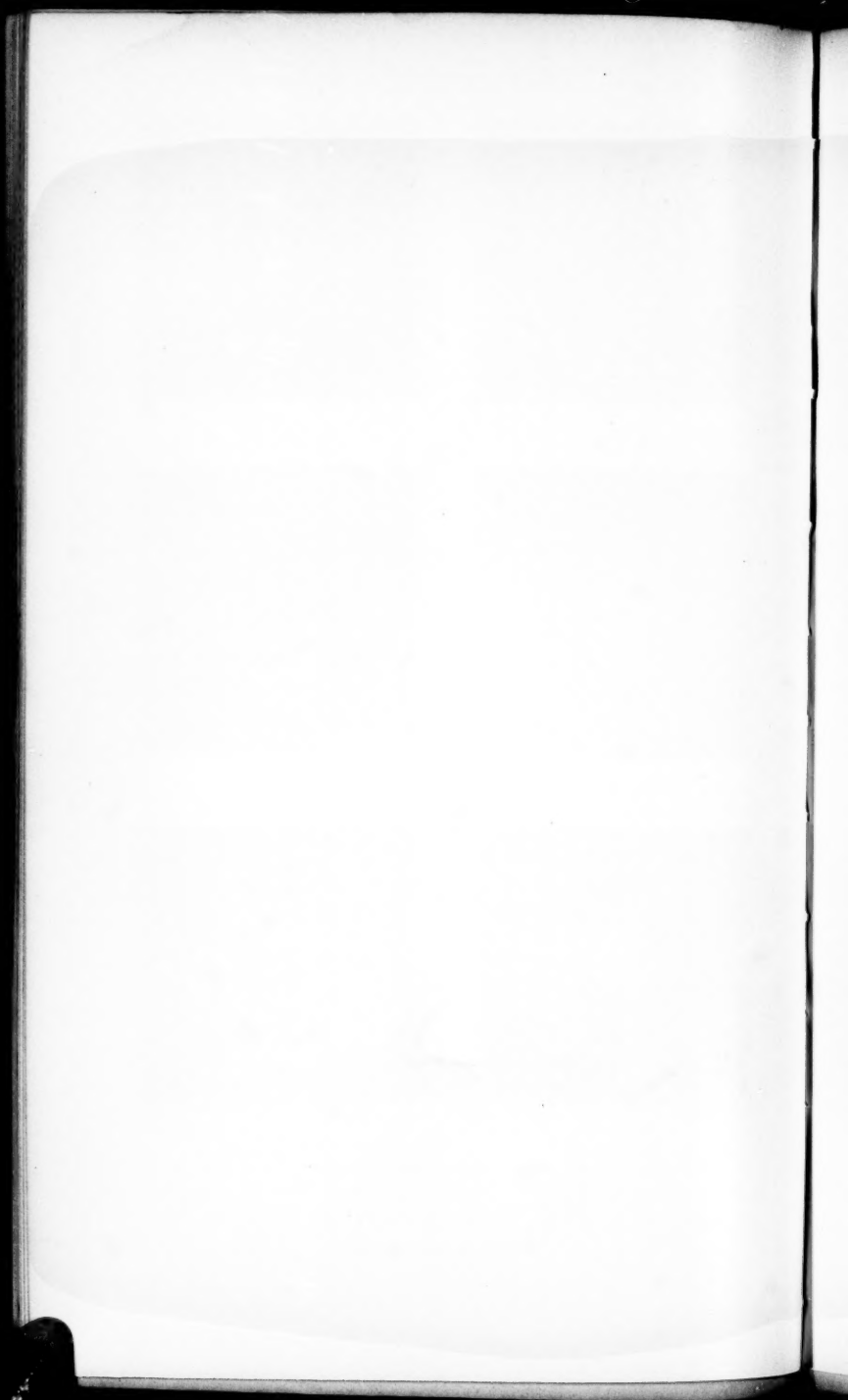
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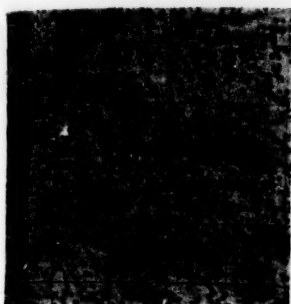


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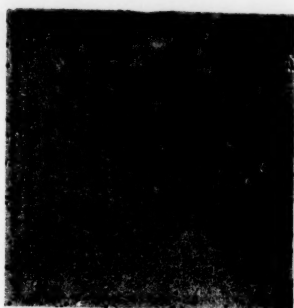


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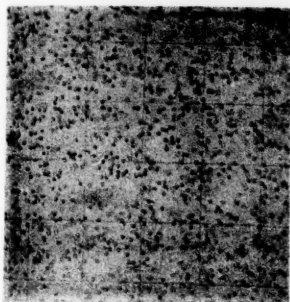




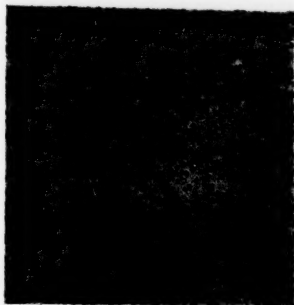
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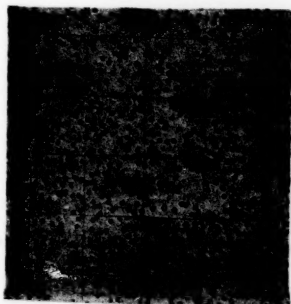
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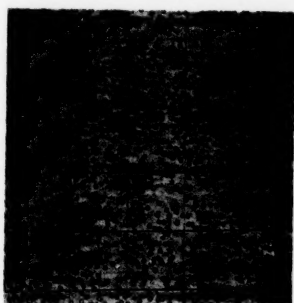
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